



# A Stereo-Atlas of Ostracod Shells

edited by P. C. Sylvester-Bradley and David J. Siveter

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Department of Geology, The University, Leicester.

## PUBLICATION DATE

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Air Photo Supply Corp., 158, South Station, Yonkers, New York 10705.  
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ON *SEMICYTHERURA NIGRESCENS* (BAIRD)  
by John E. Whittaker  
(*British Museum (Natural History) London*)

Genus *SEMICYTHERURA* Wagner, 1957

Type-species (by original designation): *Cythere nigrescens* Baird, 1838

**Diagnosis:** Shell smooth to highly ornate; caudal process pronounced. Internally, calcified inner lamella very broad both anteriorly and posteriorly; in posterior part the line of concrescence (= inner margin) sweeps strongly forwards, in many species to reach as far as the middle of the valve; consequently marginal pore canals very long though many are false particularly in the posterior region. Median hinge element of left valve usually smooth and short, but produced at both ends and generally crenulate. Males wider than females, being inflated posteriorly to accommodate the massive copulatory appendage.

**Remarks:** For a comparison with *Cytherura* and *Hemicytherura* as typified by their respective type-species, *C. gibba* (O. F. Müller) and *H. cellulosa* (Norman), see *Stereo-Atlas of Ostracod Shells*, vol. 1, pt. 4, pp. 273-280 and vol. 1, pt. 1, pp. 77-84, 1973.

Explanation of Plate 2:13:70

Fig. 1, ♀ car., ext. lt. lat. (1974.105, 400 µm long); fig. 2, ♂ car., ext. lt. lat. (1974.106, 420 µm long); fig. 3, juv-1 car., ext. lt. lat. (1974.107, 350 µm long).

Scale A (100 µm ; ×150), figs. 1-3.

*Semicytherura nigrescens* (Baird, 1838)

- 1838 *Cythere nigrescens* sp. nov. W. Baird, *Mag. Zool. Bot.*, vol. 2, p. 143, pl. V, fig. 27.  
 1866 *Cytherura nigrescens* (Baird); G. O. Sars, *Forh. VidenskSelsk. Krist.*, vol. for 1865, p. 71.  
 1957 *Semicytherura nigrescens* (Baird); C. W. Wagner, *Sur les Ostracodes du Quaternaire récent des Pays-Bas et leur utilisation dans l'étude géologique des dépôts holocènes*, Mouton & Co., The Hague, p. 81, pl. XXXVII.

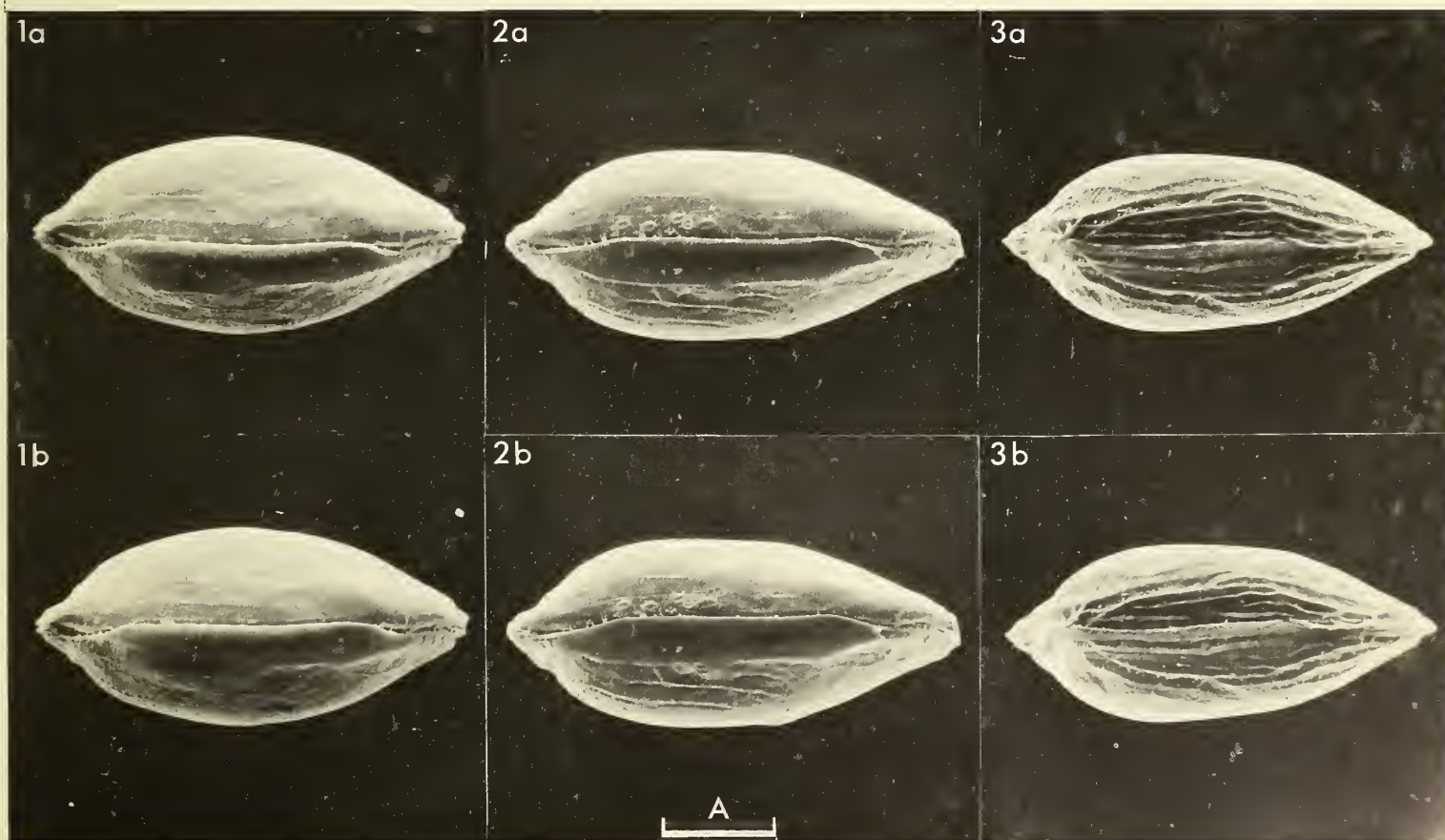
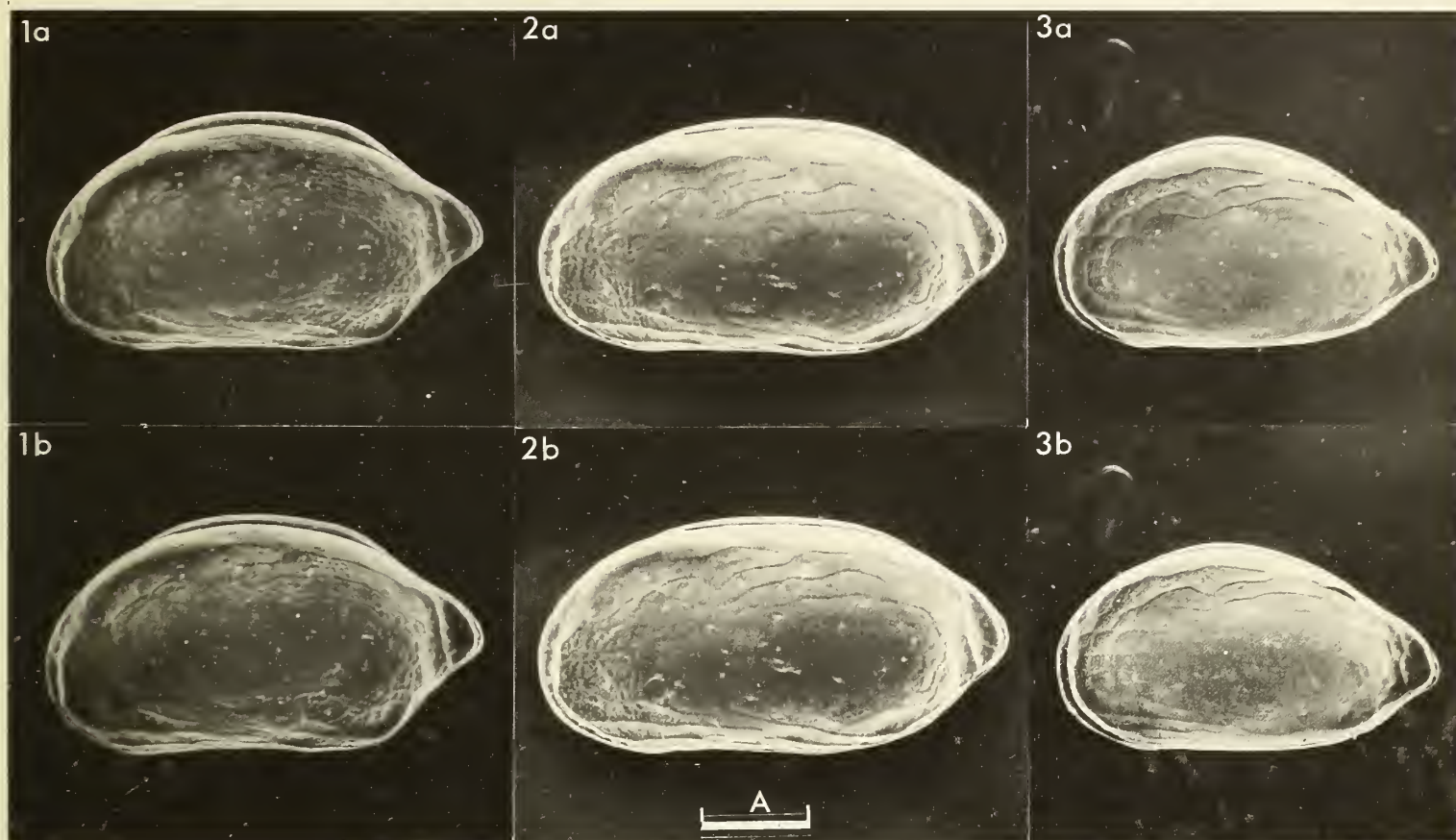
**Type specimens:** The types from Berwick Bay, Northumberland, NE England are not with the remaining part of the Baird Collection in the Brit. Mus. (Nat. Hist.) and must be presumed lost.

**Diagnosis:** Adult carapace small (c. 0.40-0.45 mm long); venter straight, dorsal margin gently arched. Ornament very subdued, made up for the most part of fine ridges and puncta arranged in rows; towards the outer surfaces, however, it becomes slightly stronger with a reticulum developed. Internally, posterior indentation of line of concrescence only moderate. Males more elongate and widest posteriorly.

Explanation of Plate 2:13:72

Fig. 1, ♀ car., ext. dors. (1974.108, 400 µm long); fig. 2, ♂ car., ext. dors. (1974.109, 420 µm long); fig. 3, ♂ car., ext. vent. (1974.110, 400 mm long).

Scale A (100 µm ; ×150), figs. 1-3.





Figured specimens: Brit. Mus. (Nat. Hist.) nos. 1974.105 (♀ car.: Pl. 2:13:70, fig. 1; Pl. 2:13:76, fig. 3), 1974.106 (♂ car.: Pl. 2:13:70, fig. 2; Pl. 2:13:76, fig. 2), 1974.107 (juv-1 car.: Pl. 2:13:70, fig. 3), 1974.108 (♀ car.: Pl. 2:13:72, fig. 1), 1974.109 (♂ car.: Pl. 2:13:72, fig. 2), 1974.110 (♂ car.: Pl. 2:13:72, fig. 3), 1974.111 (♀ LV: Pl. 2:13:74, figs. 1, 2, 4; Pl. 2:13:76, fig. 1). Hancock Mus., Newcastle-upon-Tyne, no number, but placed in a separate, marked slide (♂ RV: Pl. 2:13:74, figs. 3, 5). Nos. 1974.105-110 (living at the time of collection), from tufts of the green-alga *Cladophora* in the littoral zone at Osmington Mills, Weymouth Bay, S England (approx. long. 2°23'W, lat. 50°38'N); salinity 34‰, water temperature 19°C; coll. by the author, Sept. 1969. No. 1974.111 (dead) from The Fleet, Dorset, S England (approx. long. 2°34'W, lat. 50°38'N). Hancock Mus. specimen (dead) from a slide in the Brady Collection from Budle Bay, Northumberland, NE England, close to the type locality (approx. long. 1°45'W, lat. 55°37'N).

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#### Explanation of Plate 2:13:74

Fig. 1, ♀ LV, int. lat. (1974.111, 460 µm long). Figs. 2, 4, ♀ LV, int. lat. (1974.111): fig. 2, post. hinge; fig. 4, ant. hinge. Figs. 3, 5, ♂ RV, int. lat. (Hancock Mus. specimen, 440 µm long): fig. 3, ant. hinge; fig. 5, post. hinge.

Scale A (100 µm ; ×150), fig. 1; scale B (25 µm ; ×500), figs. 3-5.

**Remarks:** When seen alive, this rather beautiful species is further distinguished by its broad black "saddle-shape" band of colour (hence the name). The instars (Pl. 2:13:70, fig. 3) are quite unlike the adults (Pl. 2:13:70, figs. 1, 2) and it seems that Brady and Norman, working in the latter half of the 19th C., thought them to be a separate species. I have seen many such juveniles, labelled *Cytherura acuta*, in their collections in the Brit. Mus. (Nat. Hist.) and the Hancock Mus., Newcastle-upon-Tyne, but as far as I can ascertain this name was never published.

*Cytherura nigrescens* G. W. Müller (1894, *Fauna Flora Golf. Neapel.*, Monogr. 21, p. 290) is a totally different species to that of Baird. Müller later realised that the name was pre-occupied, and renamed it (1912, *Das Tierreich*, vol. 31, p. 264), by chance, *Cytherura acuta* !

**Distribution :** A phytal marine ostracod found living in the algal zone of the coasts of NW Europe from the Bay of Biscay in the S (Yassini, 1969, *Bull. Inst. Géol. Bassin Aquitaine*, vol. 7, p. 88) to the Arctic coast of Norway in the N (Sars, 1866). Hagerman (1967, *Commentat. biol.*, vol. 30, p. 5) states that it penetrates the Baltic Sea as far as the Gulf of Finland where the salinity is as low as 6‰.

Stratigraphic range: Pleistocene-Recent.

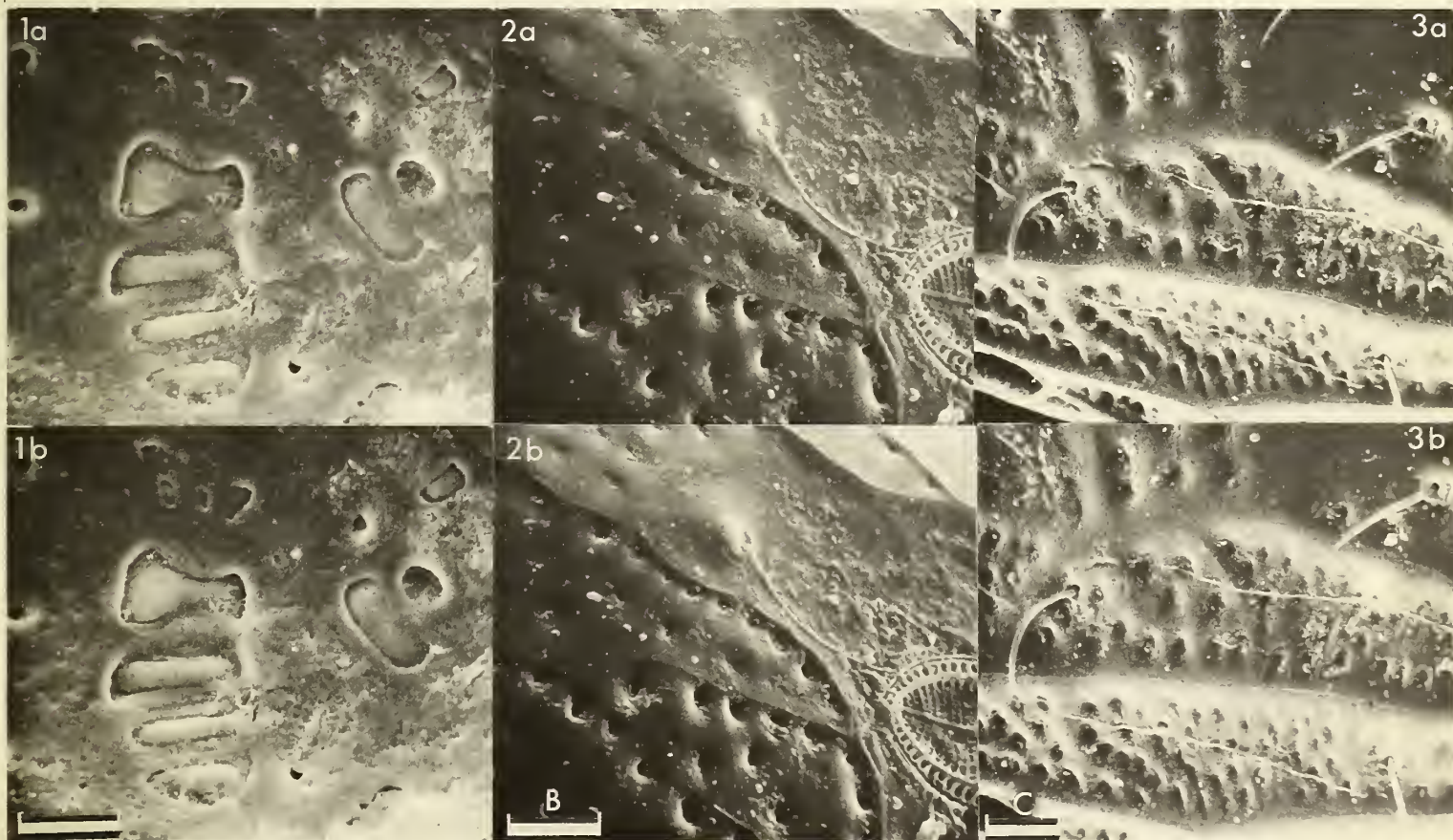
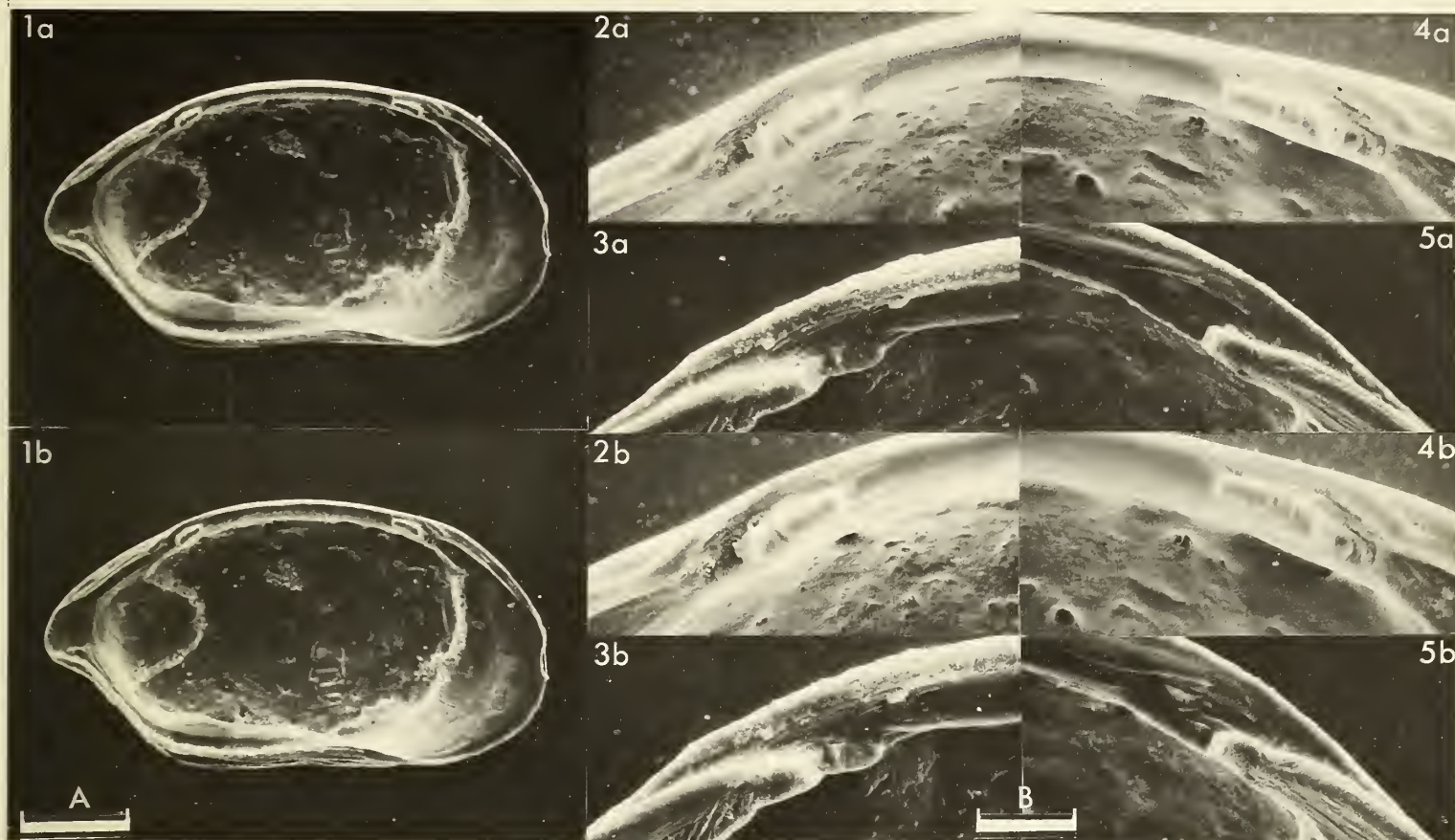
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#### Explanation of Plate 2:13:76

Fig. 1, ♀ LV, int. musc. sc. (1974.111); fig. 2, ♀ car., detail of post. dors. region showing ornament & celate normal pore & seta (1974.105) [Note attached diatom, *Cocconeis*]; fig. 3, ♂ car., detail of ant. vent. region showing several types of simple pores (1974.106).

Scale A (25 µm ; ×570), fig. 1; scale B (10 µm ; ×1300), fig. 2; scale C (10 µm ; ×1000), fig. 3.







ON *SEMICYTHERURA CORNUTA* (BRADY)  
by J. E. Whittaker  
(*British Museum (Natural History)*, London)

*Semicytherura cornuta* (Brady, 1868)

- 1868 *Cytherura cornuta* sp. nov. G. S. Brady, *Trans. Linn. Soc. Lond.*, vol. 26, pt. 2, p. 445, pl. XXXII, figs. 12-15 [♀].
- 1868 *Cytherura gibba* (O. F. Müller); G. S. Brady, *ibid.*, p. 444, pl. XXXII, figs. 68-70 [non *C. gibba* (O. F. Müller, 1785)] [♂].
- 1868 *Cytherura lineata* sp. nov. G. S. Brady, *ibid.*, p. 441, pl. XXXII, figs. 30-34, 67 [juveniles].
- 1874 *Cytherura gibba* (O. F. Müller); G. S. Brady, W. H. Crosskey & D. Robertson, *Palaeontogr. Soc. (Monogr.)*, vol. for 1874, p. 198, pl. XIII, figs. 26-29 [non *C. gibba* (O. F. Müller, 1785)].
- 1925 *Cytherura intumescens* sp. nov. G. O. Sars, *An account of the Crustacea of Norway* vol. 9, *Ostracoda*, Bergen Museum, pts. 11, 12, p. 206, pl. XCVI, fig. 1.

Explanation of Plate 2:14:78

Fig. 1, ♀ RV, ext. lat. (lectotype, 580 µm long); fig. 2, ♂ LV, ext. lat. (paralectotype, 640 µm long).

Scale A (100 µm ; ×150), figs. 1, 2.

**Lectotype:** (here designated) A ♀ RV, housed with the Brady Collection in the Hancock Mus., Newcastle-upon-Tyne; no catalogue number, but placed in a separate, labelled slide.

[Paralectotype: a ♂ LV. No catalogue number; housed as for the lectotype].

**Type locality:** Birtirbuy (= Bertraghboy) Bay, Co. Galway, W Ireland (approx. long. 9°90'W, lat. 53°23'N). Recent.

**Figured specimens:** Hancock Mus. specimens: Lectotype (♀ RV: Pl. 2:14:78, fig. 1), paralectotype (♂ LV: Pl. 2:14:78, fig. 2); both from the type locality, coll. by G. S. Brady in 1868. Brit. Mus. (Nat. Hist.) nos. 1974.120 (♀ car.: Pl. 2:14:80, fig. 1), 1974.121 (♂ car.: Pl. 2:14:80, fig. 2), 1974.122 (♂ RV: Pl. 2:14:82, fig. 1), 1974.123 (♂ LV: Pl. 2:14:82, figs. 2, 3), 1974.124 (juv-1 car.: Pl. 2:14:84, fig. 1), 1974.125 (♂ LV: Pl. 2:14:84, figs. 2, 3).

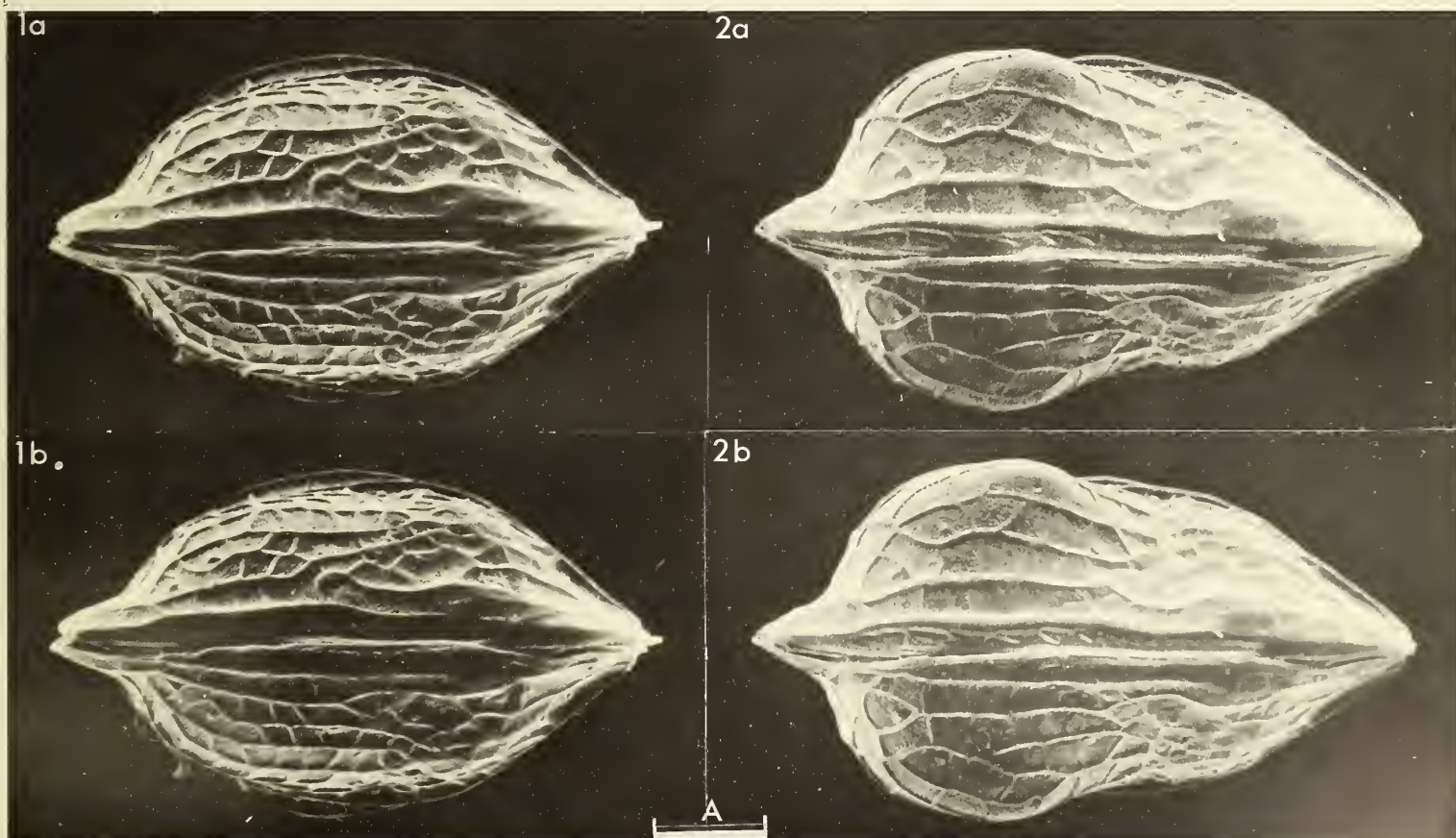
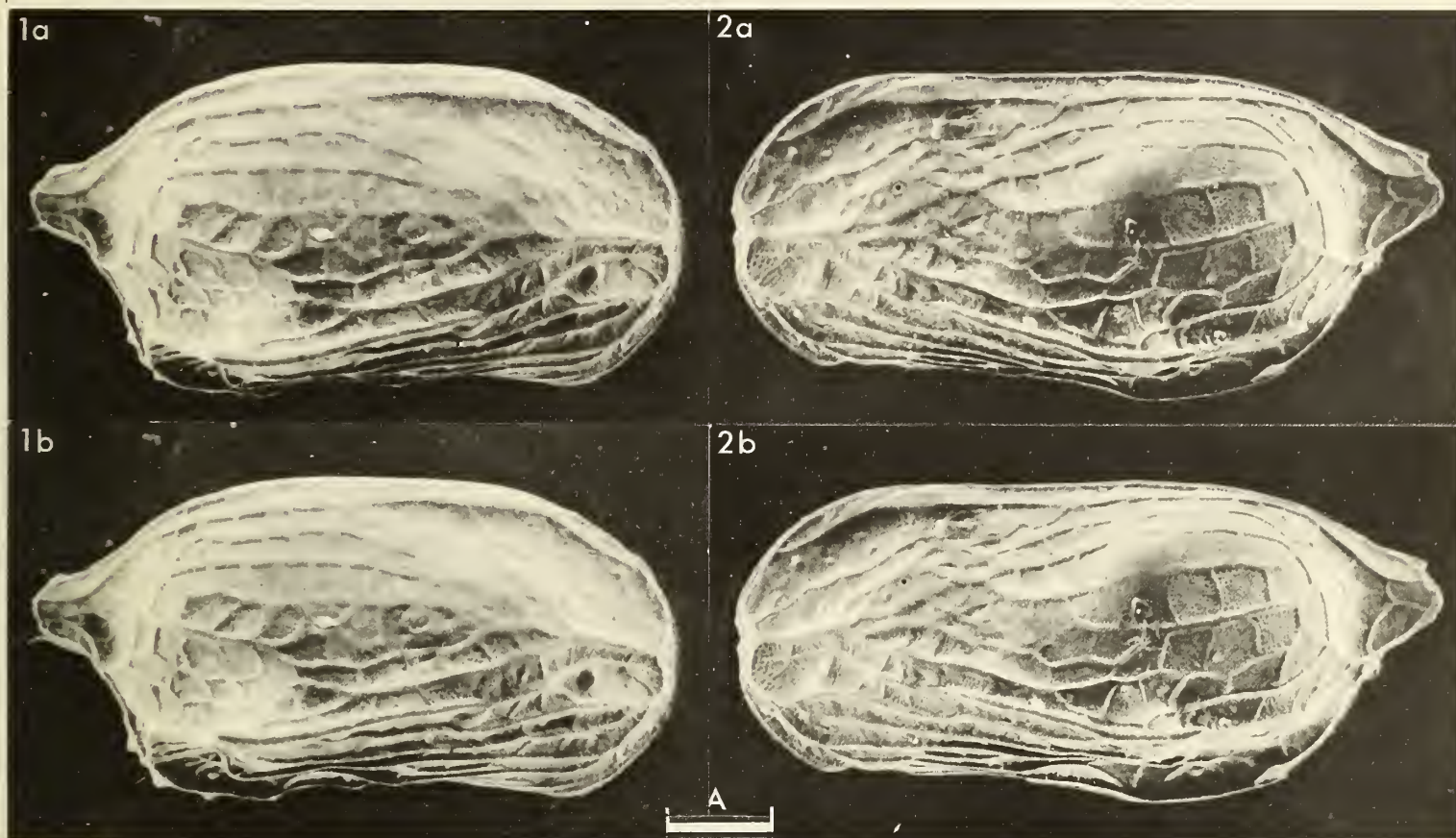
Nos. 1974.120-122, 124, 125 (living at the time of collection), were obtained from a sample of green-algae in East Fleet, Dorset, S England (approx. long. 2°29'W, lat. 50°36'N); salinity 34‰, water temperature 20°C, shallow water; coll. Aug. 1969 by J. E. Whittaker. No. 1974.123 (dead) is from Bran Point, Weymouth Bay, S England (approx. long. 2°22'W, lat. 50°38'N).

Explanation of Plate 2:14:80

Fig. 1, ♀ car., ext. dors. (1974.120, 550 µm long); fig. 2, ♂ car., ext. dors. (1974.121, 660 µm long).

Scale A (100 µm ; ×150), figs. 1, 2.







**Diagnosis:** Carapace large for the genus (c. 0.55-0.65 mm long). Ventral surface ornamented by strong longitudinal costae, one of which gives rise to a small posteroventral ala; rest of shell reticulate and finely punctate, but ornament often subdued anterodorsally. Internally, posterior line of concrescence reaches strongly forward, in males to a point well into the anterior half of the valve. Sexual dimorphism pronounced, males more elongate and strongly inflated posteriorly.

**Remarks:** The opportunity is taken to clarify and re-illustrate this poorly known NW European species. Confusion arose in the first place partly from the misleading drawing of the female in lateral view in Brady's monograph of 1868 (pl. XXXII, fig. 12) - which may have been accidentally transposed with fig. 68 on the same plate - and partly to Brady's own confusion of the male of this species with that of *Cytherura gibba* (O. F. Müller). This latter aspect was discussed in my paper on *C. gibba* (*Stereos-Atlas of Ostracod Shells*, vol. 1, pt. 4, pp. 273-280, 1973).

Thanks to the kind co-operation of Dr. M. E. Christiansen (Zoological Mus., Oslo) I have also been able to study the types of *C. intumescens* Sars, 1925. The carapace of Sars' female holotype (no. F.1424) was compared with females in Brady's slides of Birtirbuy Bay, and the copulatory appendage of the male (in slide no. F.7996) with that shown in Pl. 2:14:82, fig. 1 of this paper and other dissected males of *S. cornuta* in my collection. I am firmly of the opinion that the two are conspecific.

#### Explanation of Plate 2:14:82

Fig. 1, ♂ RV, int. lat. showing soft-parts (1974.122, 590 µm long). Figs. 2, 3, ♂ LV, int. lat. (1974.123, 620 µm long); fig. 2, ant. hinge; fig. 3, post. hinge.

Scale A (100 µm ; ×165), fig. 1; scale B (25 µm ; ×400), figs. 2, 3.

**Remarks (contd.):** The only species which could now be confused with *S. cornuta* in NW European waters is *S. acuticostata* (Sars, 1866, *Forh. VidenskSelsk. Krist.*, vol. for 1865, p. 76). The latter, however, is smaller (adults c. 0.50 mm long), has a number of strong longitudinal carinae on the upper surface of its valves and has males which are relatively less tumid posteriorly.

**Distribution:** Recorded as *Cytherura cornuta* only from the coasts of Britain and Ireland. Two records, under the name of *C. intumescens*, however, extend the geographical range to the NW coast of France (de Vos, 1957, *Archs. Zool. exp. gén.*, vol. 95, p. 42) and the S coast of Norway (Sars, 1925). I was unable to find the specimens from the Dardanelles, Turkey (see Brady, op. cit., p. 445) but it is thought they would most likely have belonged to one of G. W. Müller's Mediterranean species, a number of which look superficially like *S. cornuta*.

Little is known of the ecology of the species. Of the previous live records, Sars merely states that it was found between 10 and 30 fathoms (18-54 m), de Vos is not specific, but the biotope of her material would appear to be sea-grass or marine-algae. I have found it myself on marine-algae in the littoral zone.

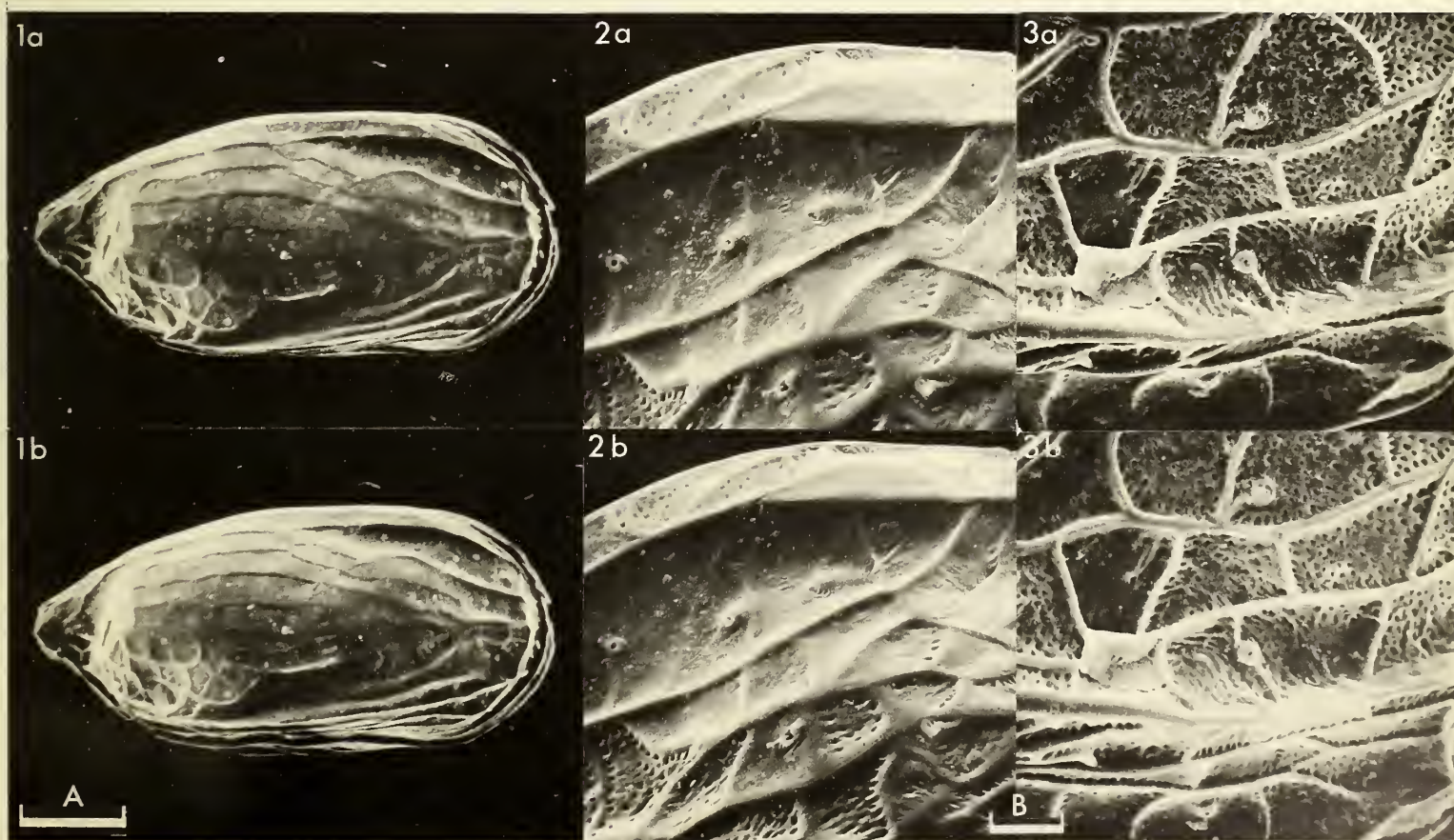
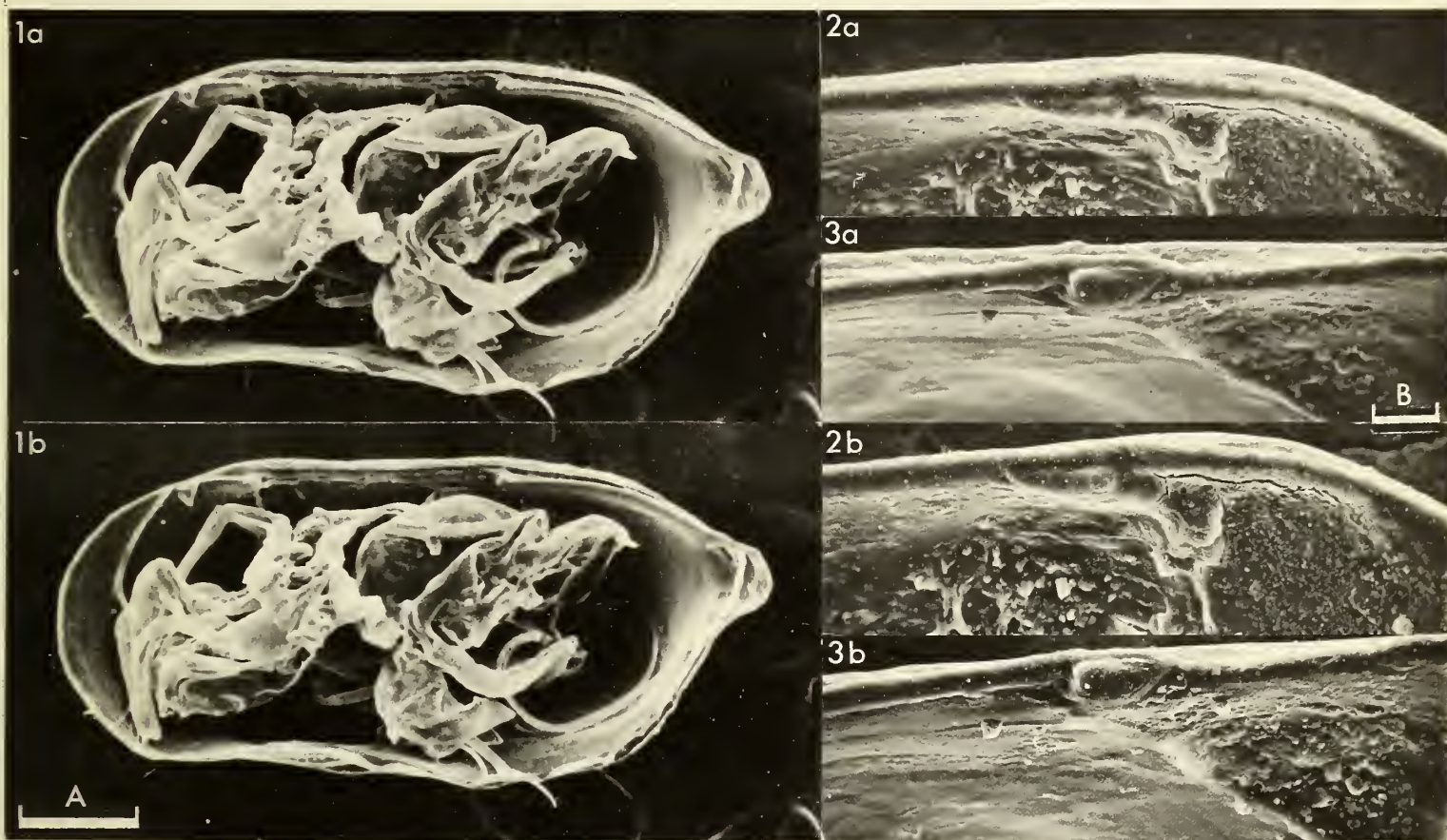
Stratigraphical range: Pleistocene-Recent.

#### Explanation of Plate 2:14:84

Fig. 1, juv-1 car., ext. rt. lat. (1974. 124, 470 µm long). Figs. 2, 3, ♂ LV, ext. lat. (1974.125, 590 µm long): fig. 2, detail of ant. dors. region, showing subdued ornament, eye-spot & simple pores; fig. 3, detail of post-vent. region, showing well developed ornament.

Scale A (100 µm ; ×150), fig. 1; scale B (25 µm ; ×400), figs. 2, 3.







ON *SEMICYTHERURA SELLA* (SARS)  
by John E. Whittaker  
(*British Museum (Natural History)*, London)

*Semicytherura sella* (Sars, 1866)

- 1866 *Cytherura sella* sp. nov. G. O. Sars, *Forh. VidenskSelsk. Krist.*, vol. for 1865, p. 73.  
 1868 *Cytherura cuneata* sp. nov. G. S. Brady, *Trans. Linn. Soc. Lond.*, vol. 26, pt. 2, p. 442, pl. XXXII, figs. 35-38, 63 [♂].  
 1869 *Cytherura flavescens* sp. nov. G. S. Brady, *Ann. Mag. nat. Hist.*, ser. 4, vol. 3, p. 49, pl. VIII, figs. 13-15 [♀].  
 1957 *Semicytherura sella* (Sars); C. W. Wagner, *Sur les Ostracodes du Quaternaire récent des Pays-Bas et leur utilisation dans l'étude géologique des dépôts holocènes*, Mouton & Co., The Hague, p. 85, pl. XL.

-- Type specimens: The Curators of Invertebrates at the Zoological Museums of Oslo and Bergen (respectively, M. E. Christiansen and J. Kjennerud) report (pers. comm.) that no specimens of *Cytherura sella* exist in Sars' collections at these repositories. The type must, therefore, be presumed lost.

Type locality: Oslo Fjord, Norway.

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Explanation of Plate 2:15:86

Fig. 1, ♀ car., ext. lt. lat. (1974.112, 410 µm long); fig. 2, ♂ car., ext. lt. lat. (1974.113, 430 µm long); fig. 3, juv-1 car.: ext. lt. lat. (1974.114, 360 µm long).

Scale A (100 µm ; ×150), figs. 1-3.

Figured specimens: Brit. Mus. (Nat. Hist.) nos. 1974.112 (♀ car.: Pl. 2:15:86, fig. 1), 1974.113 (♂ car.: Pl. 2:15:86, fig. 2; Pl. 2:15:92, fig. 1), 1974.114 (juv-1 car.: Pl. 2:15:86, fig. 3), 1974.115 (♀ car.: Pl. 2:15:88, fig. 1), 1974.116 (♂ car.: Pl. 2:15:88, fig. 2; Pl. 2:15:92, fig. 2), 1974.117 (♂ car.: Pl. 2:15:88, fig. 3; Pl. 2:15:92, fig. 3), 1974.118 (♀ LV: Pl. 2:15:90, figs. 1, 3, 4), 1974.119 (♀ RV: Pl. 2:15:90, fig. 2).

Nos. 1974.112-117 from various stations in East Fleet, Dorset, S England (approx. long. 2°29-31'W, lat. 50°35-36'N); coll. by the author from sand scrapings and sediment from the holdfasts of seaweeds; living at the time of collection in salinities of 30-35‰ and water temperatures of 5-20°C. No. 1974.118 (dead) from off Tarbert, Loch Fyne, W Scotland (approx. long. 5°26'W, lat. 55°52'N), taken from a slide (no. 1900.3.6.337) in the Brit. Mus. (Nat. Hist.), collected 1876. No. 1974.119 (dead) from the entrance to Christchurch Harbour, Hampshire, S England (approx. long. 1°45'W, lat. 50°43'N); coll. by Dr. J.W. Murray, Univ. of Bristol, in 1960, to whom thanks are due for the donation of the material.

Diagnosis: Adults small (c. 0.40-0.45 mm long), dorsal and ventral margins of shell sub-parallel. Ornament reticulate, but longitudinal costae more strongly developed than transverse costae; intervening areas finely punctate. Males more elongate and tumid mid-posteriorly.

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Explanation of Plate 2:15:88

Fig. 1, ♀ car., ext. dors. (1974.115, 430 µm long); fig. 2, ♂ car., ext. dors. (1974.116, 450 µm long); fig. 3, ♂ car., ext. vent. (1974.117, 430 µm long).

Scale A (100 µm ; ×140), figs. 1-3.





Remarks: The forms described as *C. cuneata* and *C. flavescens* are both synonymous with the present species; the reasons for the confusion being given by Brady & Norman, 1889 (*Scient. Trans. R. Dubl. Soc.*, ser. 2, vol. 4, p. 194). On studying more material from various localities in Britain and comparing them with the Scandinavian types of *C. sella*, these authors somewhat belatedly corrected the mistake.

Distribution: A marine or near-marine species confined, on present evidence, to the coasts of NW Europe. Reliable living records exist from the Arcachon Basin, SW France (Yassini, 1969, *Bull. Inst. Géol. Bassin Aquitaine*, vol. 7, p. 90) in the S, to the S coast of Norway (Sars, 1866) in the N, including the Baltic Sea. Unlike most species of *Semicytherura*, which appear to be phytal in habit, *S. sella* seems to be confined to the benthos, mostly silt and sand substrates or amongst sediment trapped by the holdfasts of marine-algae. It is, in fact, probably a "silt-eater", as the stomach sac was seen on dissection by the author to be full of fine sand grains when viewed under cross-polarised light.

Stratigraphic range: Pleistocene-Recent.

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#### Explanation of Plate 2:15:90

Fig. 1, ♀ LV, int. lat. (1974.118, 450 µm long); fig. 2, ♀ RV, int. lat. (1974.119, 440 µm long). Figs. 3, 4, ♀ LV, int. lat. (1974.119): fig. 3, ant. hinge; fig. 4, post. hinge.

Scale A (100 µm ; ×150), figs. 1, 2; scale B (25 µm ; ×500), figs. 3, 4.

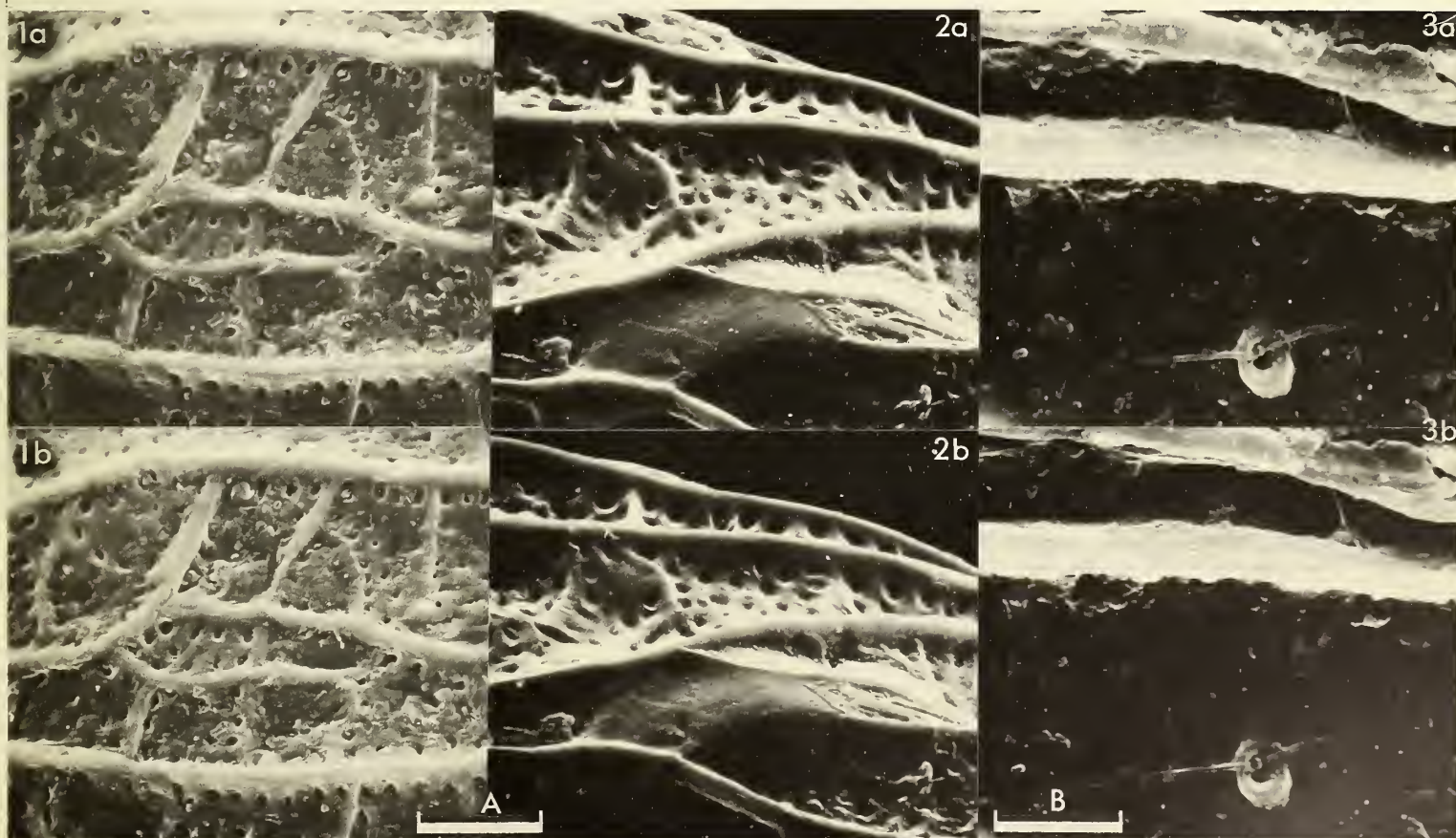
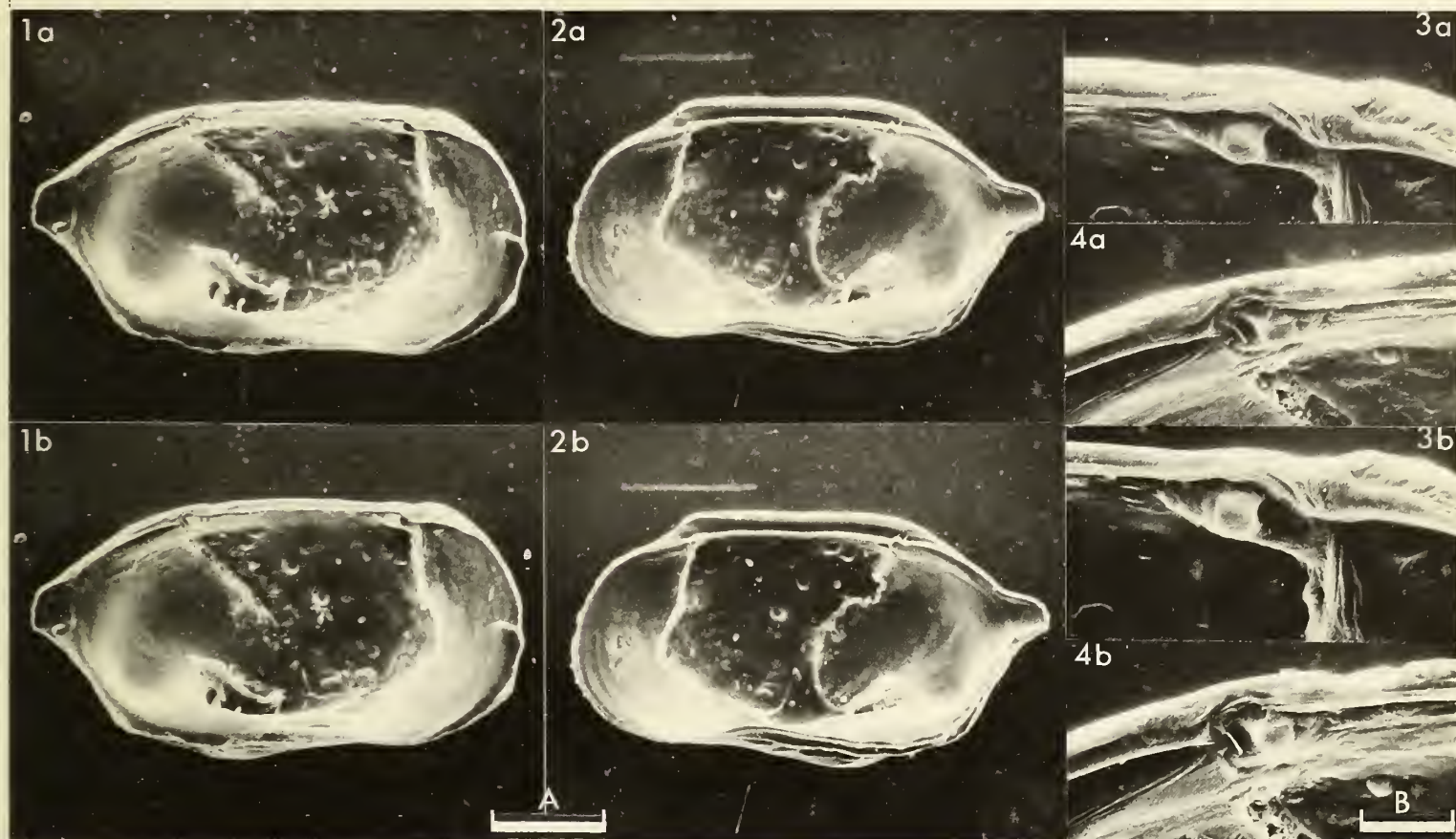
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#### Explanation of Plate 2:15:92

Fig. 1, ♂ car., detail of mid-region of shell (1974.113); fig. 2, ♂ car., detail of ant. dors. region, showing eye-spot (1974.116); fig. 3, ♂ car., detail of post. part of venter, showing simple pore & bifid seta (1974.117).

Scale (25 µm ; ×730), figs. 1, 2; scale B (10 µm ; ×1800), fig. 3.







ON *SEMICYTHERURA SULCATA* (G. W. MÜLLER)  
by Neriman Doruk  
(University of Leicester, England)

*Semicytherura sulcata* (G. W. Müller, 1894)

- 1894 *Cytherura sulcata* sp. nov. G. W. Müller, *Fauna Flora Golf. Neapel*, Monogr. 21, p. 297, pl. 17, figs. 4, 10; pl. 19, fig. 19.  
1959 *Semicytherura sulcata* (G. W. Müller); G. Ruggieri, *Atti Soc. ital. Sci. nat.*, vol. 98, p. 205.  
1968 *Semicytherura sulcata* (G. W. Müller); M. Masoli, *Memorie Mus. trident. Sci. nat.*, vol. 17, fasc. 1, p. 45, pl. 10, figs. 156, 157.

Holotype: Housed in the collections of the Crustacea Section of the Zoological Museum, Berlin; catalogue no. 9225. See Diebel, *Geologie*, vol. 11, pt. 2, p. 245, 1962.

Type locality: Recent, Bay of Naples, W Italy; associated with the sea-grass *Posidonia*.

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Explanation of Plate 2:16:94

Fig. 1, ♂ RV, ext. lat. (IO 5623, 470 µm long); fig. 2, ♂ LV, ext. lat. (IO 5624, 520 µm long).

Scale A (250 µm ; ×183), fig. 1; scale B (250 µm ; ×164), fig. 2.

Figured specimens: Brit. Mus. (Nat. Hist.) nos. IO 5623 (♂ RV: Pl. 2:16:94, fig. 1), IO 5624 (♂ LV: Pl. 2:16:94, fig. 2; Pl. 2:16:96, figs. 1, 3), IO 5625 (♀ RV: Pl. 2:16:96, fig. 2; Pl. 2:16:100, fig. 2), IO 5626 (♂ RV: Pl. 2:16:98, fig. 1), IO 5627 (♀ LV: Pl. 2:16:98, fig. 2), IO 5628 (♂ RV: Pl. 2:16:100, fig. 1). All from a drilling off Iskenderun Bay, S coast of Turkey, 400 ft below sea-floor. Pleistocene; presumed shallow marine/littoral. Approx. long. 35°59'E, lat. 36°37'N.

Diagnosis: Carapace elongate; surface costate (diagnostic pattern), punctate in intervening sulci, number of puncta highly variable.

Remarks: Variation in the development of puncta is continuous from very few (Pl. 2:16:94, fig. 1; Pl. 2:16:98, figs. 1, 2) to very many (Pl. 2:16:94, fig. 2; Pl. 2:16:100, fig. 1) and even to coalescence of puncta to form fossae (Pl. 2:16:100, fig. 2). Sexual dimorphism fairly strong; males more elongate and slightly inflated posteriorly (cf. ♂: Pl. 2:16:98, fig. 1 with ♀: Pl. 2:16:98, fig. 2).

Distribution: Recent in Gulf of Naples (type locality) and Adriatic Sea (Masoli, op. cit.), Italy.  
Quaternary in Italy (Ruggieri, op. cit.).  
Pleistocene in Turkey (herein).

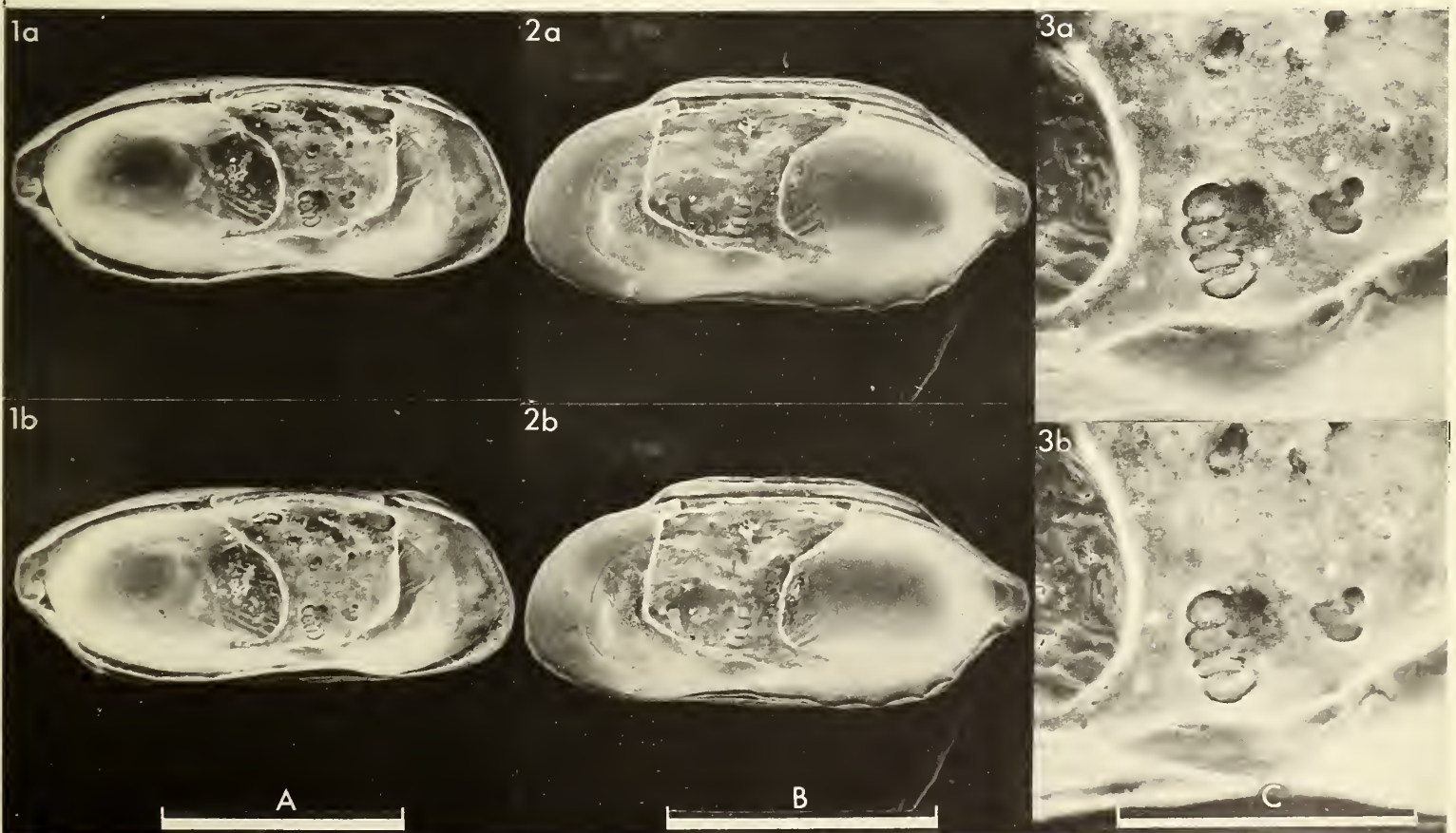
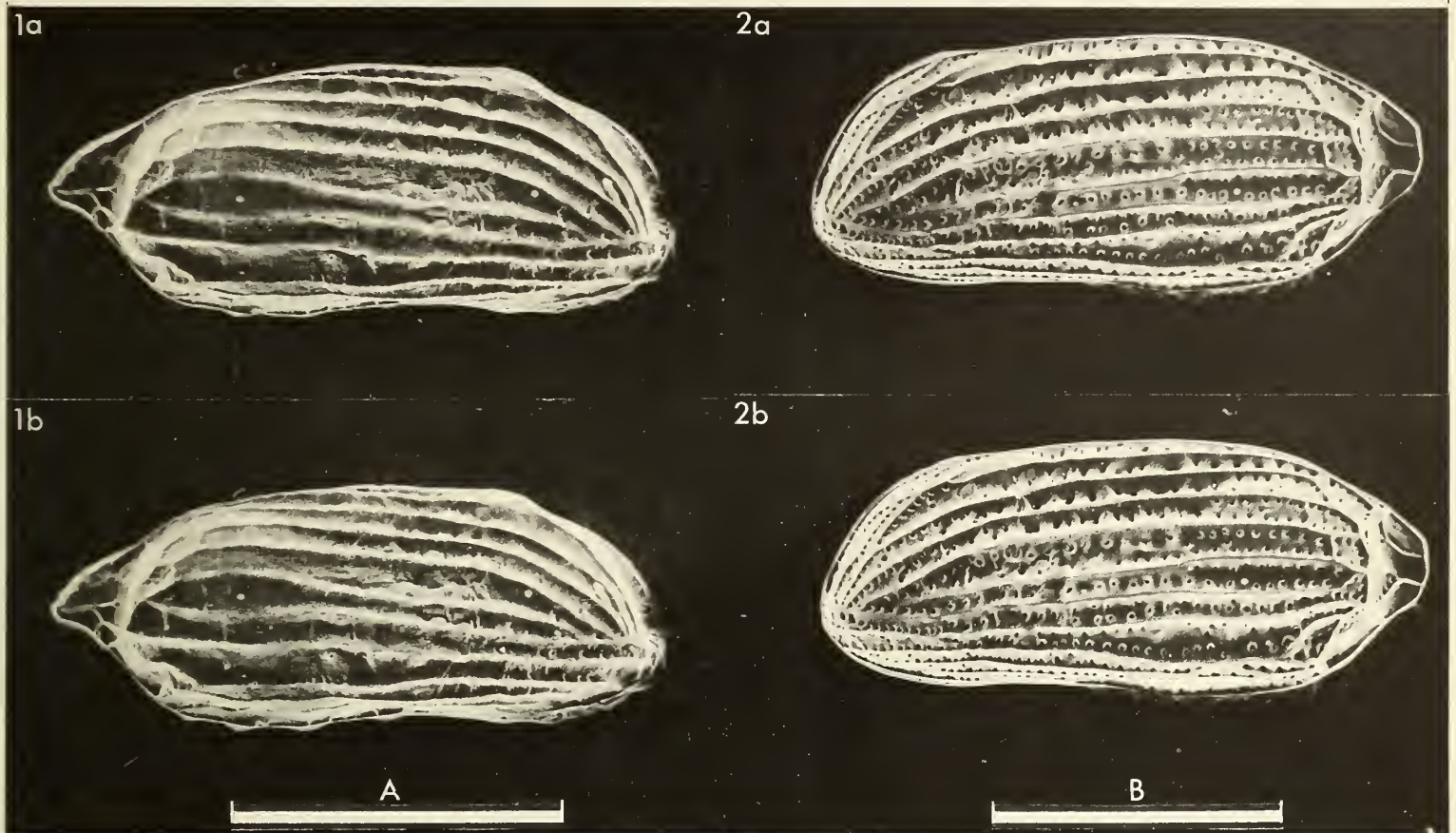
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Explanation of Plate 2:16:96

Fig. 1, ♂ LV, int. lat. (IO 5624); fig. 2, ♀ RV, int. lat. (IO 5625, 470 µm long); fig. 3, ♂ LV, int. musc. sc. (IO 5624).

Scale A (250 µm ; ×135), fig. 1; scale B (250 µm ; ×151), fig. 2; scale C (100 µm ; ×418), fig. 3.





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Explanation of Plate 2:16:98

Fig. 1, ♂ RV, ext. lat. (IO 5626, 520  $\mu$ m long); fig. 2, ♀ LV, ext. lat. (IO 5627, 440  $\mu$ m long).

Scale A (250  $\mu$ m ;  $\times 164$ ), fig. 1; scale B (250  $\mu$ m ;  $\times 198$ ), fig. 2.

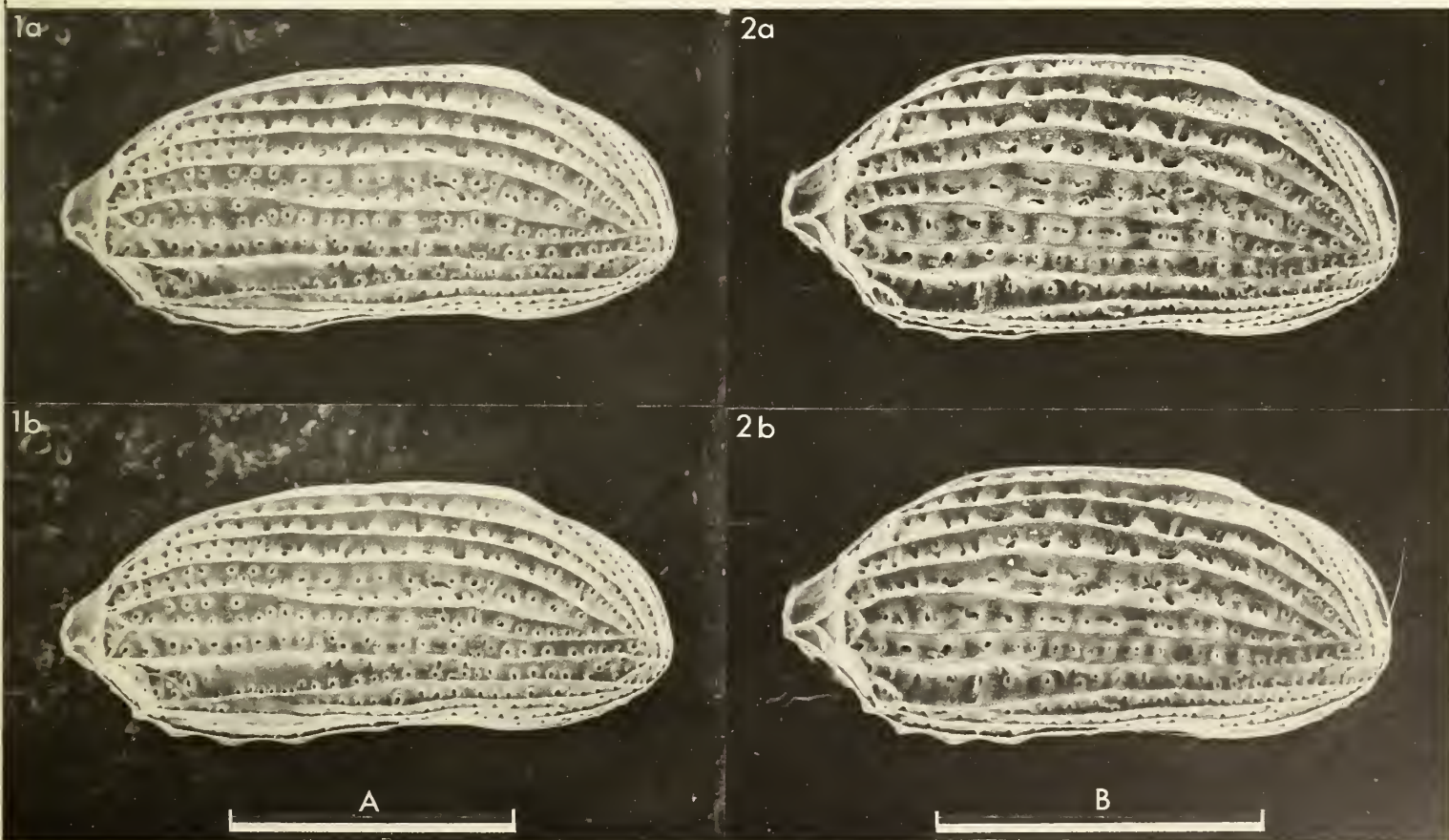
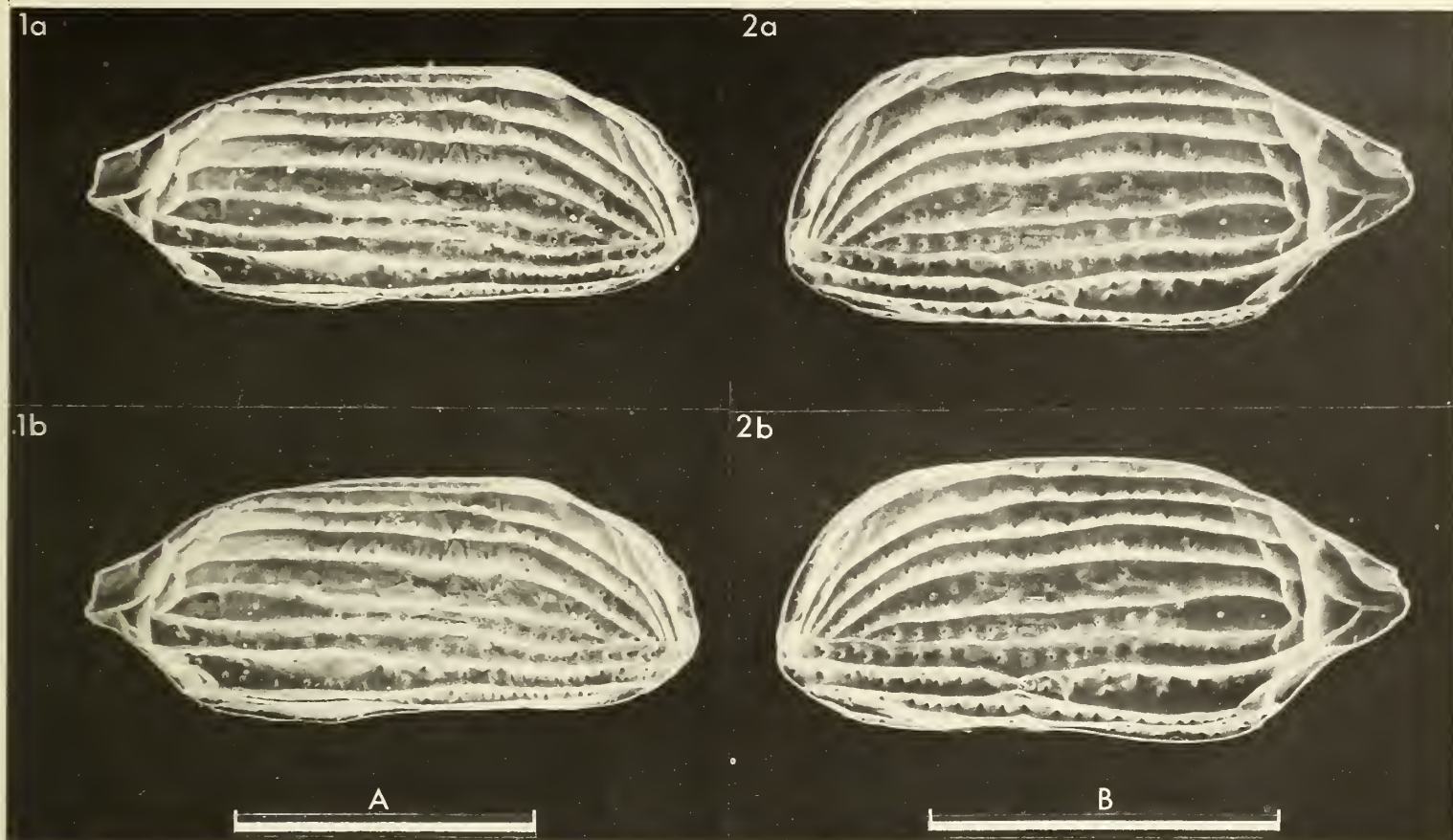
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Explanation of Plate 2:16:100

Fig. 1, ♂ RV, ext. lat. (IO 5628, 520  $\mu$ m long); fig. 2, ♀ RV, ext. lat. (IO 5625).

Scale A (250  $\mu$ m ;  $\times 158$ ), fig. 1; scale B (250  $\mu$ m ;  $\times 181$ ), fig. 2.







ON *SEMICYTHERURA RUGGIERII* (PUCCI)  
by Neriman Doruk  
(University of Leicester, England)

*Semicytherura ruggierii* (Pucci, 1955)

- 1955 *Cytherura ruggierii* sp. nov. A. Pucci, G. Geol., ser. 2, vol. 25, p. 167, pl. 1, figs. 3, 4, text-fig. 1.  
1972 *Semicytherura ruggierii* (Pucci); H. Uffenorde, Göttinger Arb. Geol. Paläont., no. 13, p. 92, pl. 11, figs. 2, 4.

Holotype: ♂ LV, O. C. R., slide no. 878; in the Istituto di Geologia e Paleontologia, University of Palermo, Italy.

Type locality: The Tronto Valley, E Italy; approx. long. 13°45'E, lat. 42°50'N. Pleistocene clay (Calabrian).

Diagnosis: Smooth to reticulate surface, sexually dimorphic ornament.

---

Explanation of Plate 2:17:102

Fig. 1, ♀ RV, ext. lat. (IO 5636, 500 µm long); fig. 2, ♂ LV, ext. lat. (broken, 480 µm long); fig. 3, detail of a celate normal pore (IO 5637).

Scale A (250 µm ; ×164), fig. 1; scale B (250 µm ; ×170), fig. 2; scale C (5 µm ; ×4756), fig. 3.

Figured specimens: Brit. Mus. (Nat. Hist.) nos. IO 5636 (♀ RV: Pl. 2:17:102, fig. 1), IO 5637 (♂ RV: Pl. 2:17:102, fig. 3; Pl. 2:17:104, fig. 2), IO 5638 (♀ LV: Pl. 2:17:104, fig. 1). The valve (♂ LV) figured in Pl. 2:17:102, fig. 2; Pl. 2:17:104, fig. 3, has been broken after the stereoscan process.

IO 5636 and IO 5638 from a drilling off Iskenderun Bay, S coast of Turkey, 430 ft below sea-bed; Pleistocene; presumed shallow marine; approx. long. 35°59'E, lat. 36°37'N. IO 5637 and figured broken specimen from a drilling off S coast of Turkey, 630 ft below sea-floor; Plio-Pleistocene; presumed littoral; approx. long. 35°45'E, lat. 36°28'N.

Remarks: Variable in ornament, surface smooth between costae (see Pl. 2:17:102, fig. 1) or can be wholly reticulate (as figured in Uffenorde, op. cit., pl. 11, figs. 2, 4). But variation is continuous; intermediate form figured in Pl. 2:17:102, fig. 2. Sexual dimorphism very pronounced; males more elongate and with median rib lacking in females (cf. ♀: Pl. 2:17:102, fig. 1, with ♂: Pl. 2:17:102, fig. 2).

Distribution: Plio-Pleistocene and Pleistocene in Turkey; Pleistocene in Italy (Pucci, op. cit.). Recent in the Adriatic (Uffenorde, op. cit.) and Aegean Seas (Barbeito-Gonzalez, 1971, Mitt. hamb. zool. Mus. Inst., vol. 6, p. 293), E Mediterranean.

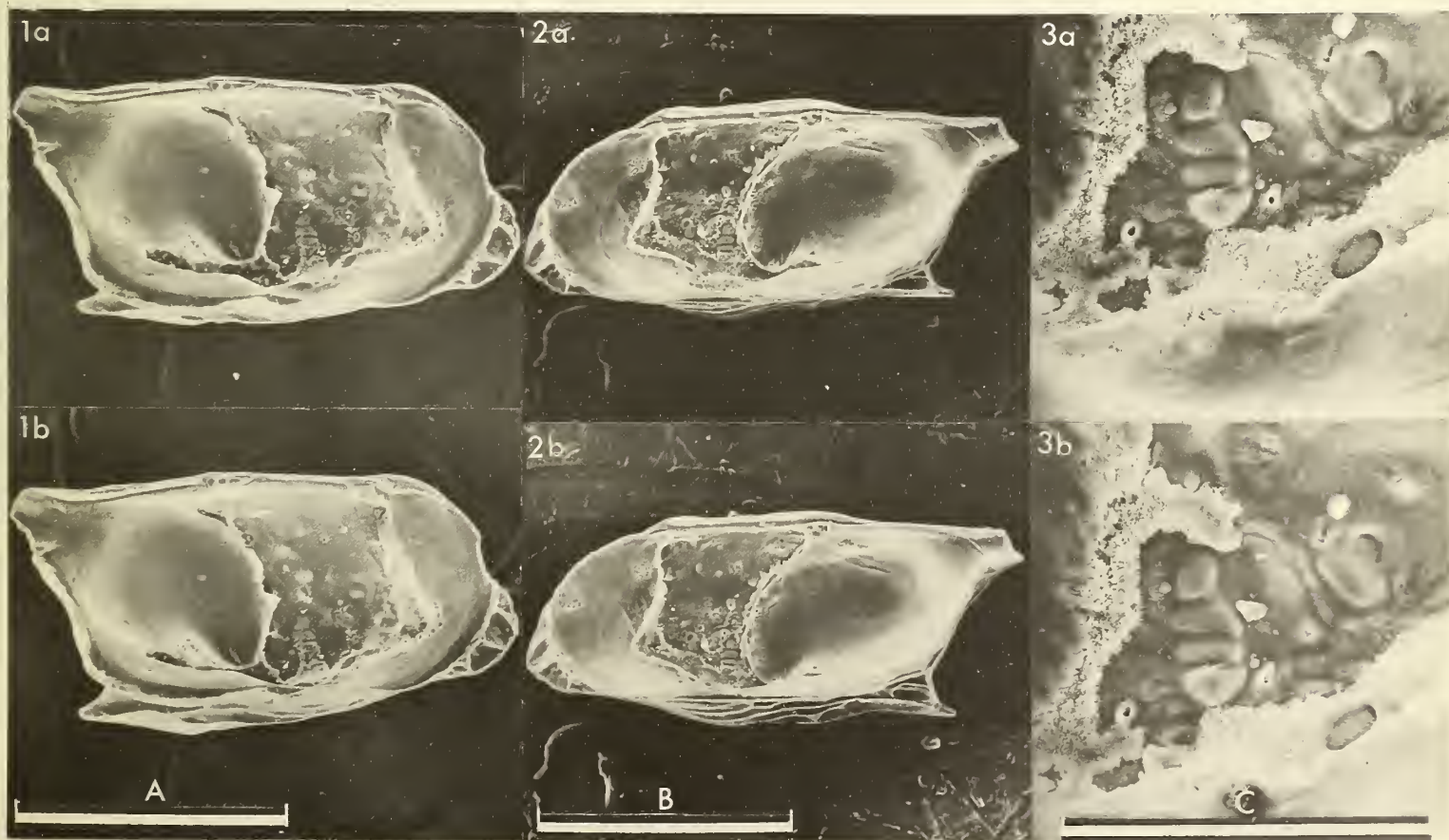
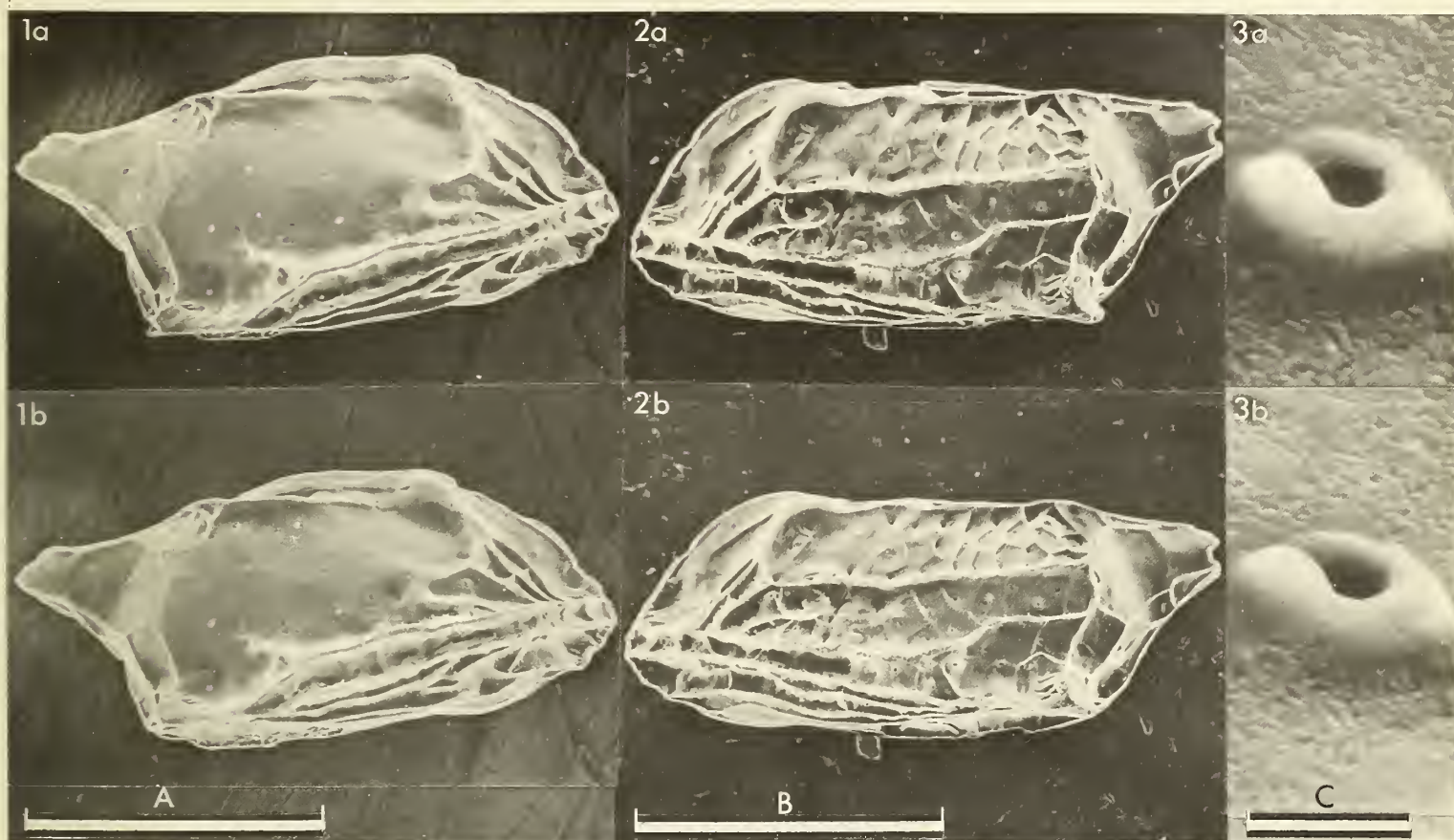
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Explanation of Plate 2:17:104

Fig. 1, ♀ LV, int. lat. (IO 5638, 470 µm long); fig. 2, ♂ RV, int. lat. (IO 5637, 490 µm long); fig. 3, ♂ LV, int. musc. sc. (broken).

Scale A (250 µm ; ×149), fig. 1; scale B (250 µm ; ×140), fig. 2; scale C (100 µm ; ×518), fig. 3.







ON *SEMICYTHERURA INCONGRUENS* (G. W. MÜLLER)  
by Neriman Doruk  
(University of Leicester, England)

*Semicytherura incongruens* (G. W. Müller, 1894)

- 1894 *Cytherura incongruens* sp. nov. G. W. Müller, *Fauna Flora Golf. Neapel*, Monogr. 21, p. 296, pl. 17, figs. 2, 7, 8; pl. 19, fig. 7.  
1968 *Semicytherura incongruens* (G. W. Müller); M. Masoli, *Memorie Mus. trident. Sci. nat.*, vol. 17, fasc. 1, p. 40, pl. 10, figs. 141-144.

Holotype: Housed in the collections of the Crustacea Section, Zoological Museum, Berlin; catalogue no. 9224. See Diebel, *Geologie*, vol. 11, pt. 2, p. 245, 1962.

Type locality: Müller's type came from a sample of *Posidonia* sea-grass, Bay of Naples, W Italy.

Diagnosis: Carapace, ovate. Ventral half of shell longitudinally costate, variably reticulate and strongly punctate, remainder smooth to punctate.

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Explanation of Plate 2:18:106

Fig. 1, ♀ RV, ext. lat. (IO 5620, 480 µm long); fig. 2, ♀ LV, ext. lat. (IO 5621, 560 µm long).

Scale A (250 µm ; ×180), fig. 1; scale B (250 µm ; ×154), fig. 2.

Figured specimens: Brit. Mus. (Nat. Hist.) IO 5620 (♀ RV: Pl. 2:18:106, fig. 1), IO 5621 (♀ LV: Pl. 2:18:106, fig. 2; Pl. 2:18:108, fig. 1; Pl. 2:18:112, fig. 2), IO 5622 (♂ RV: Pl. 2:18:108, figs. 2, 3; Pl. 2:18:110, fig. 1), IO 5725 (♀ RV: Pl. 2:18:112, fig. 1), IO 5726 (♂ LV: Pl. 2:18:110, fig. 2). IO 5620 and IO 5621 from drillings off Iskenderun Bay, S coast of Turkey, 1050 ft below sea-floor; Plio-Pleistocene; presumed shallow marine; approx. long. 35°45'E, lat. 36°28'N. IO 5622 from drillings off Iskenderun Bay, Turkey, 600 ft below sea-floor; Pleistocene; presumed shallow marine; approx. long. 35°59'E, lat. 36°37'N. IO 5725 and IO 5726 from drillings off S coast of Turkey, 400 ft below sea-floor; Pleistocene; presumed shallow marine; approx. long. 35°04'E, lat. 36°26'N.

Remarks: Very variable in number of puncta which coincide with normal pore canals. Dorsal surface can be quite free of puncta. Sexual dimorphism distinct; female tumid towards venter, seen dorsally widest point in middle; males more elongate, with slight inflation mid-posteriorly and posteroventral depression.

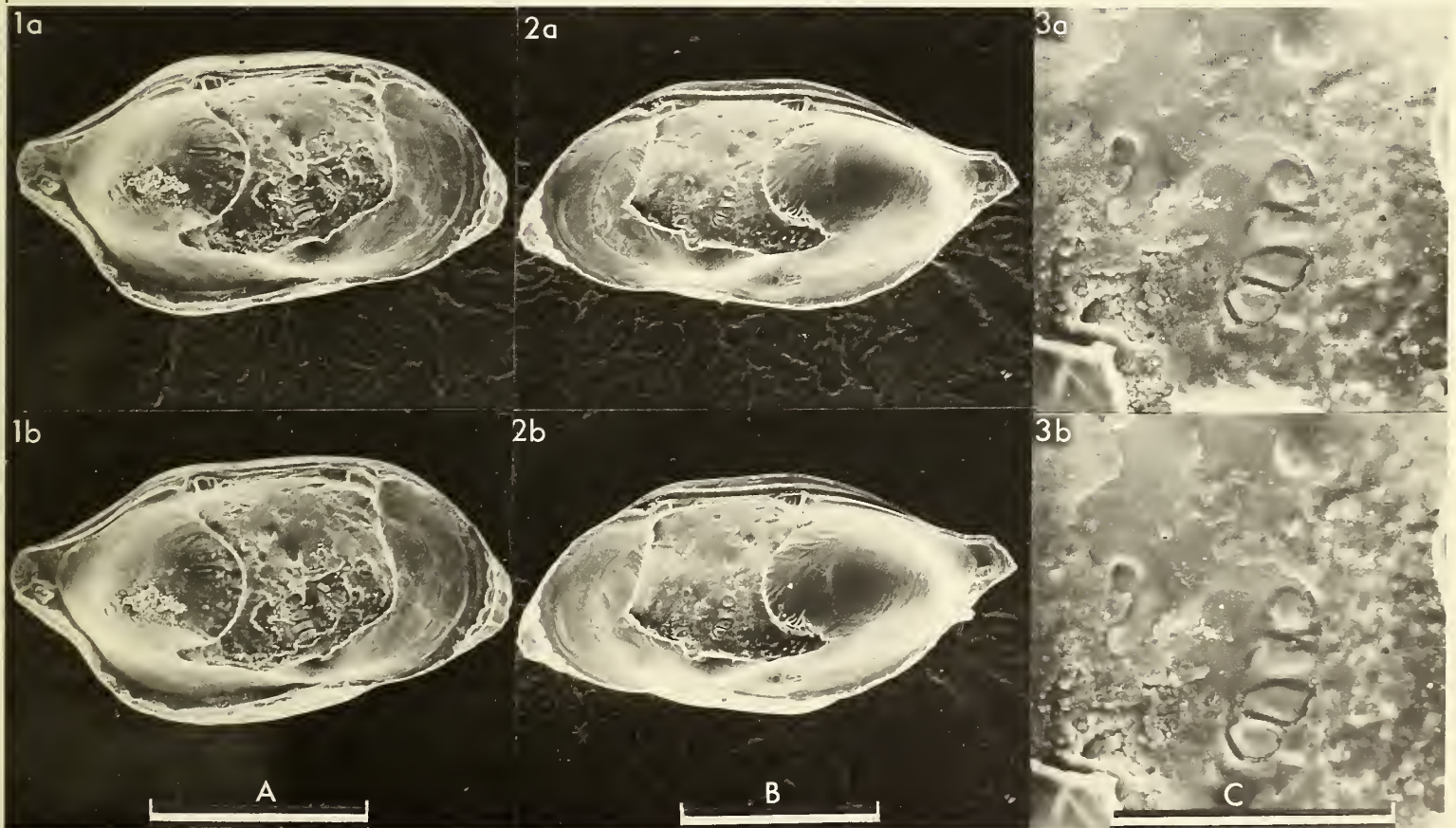
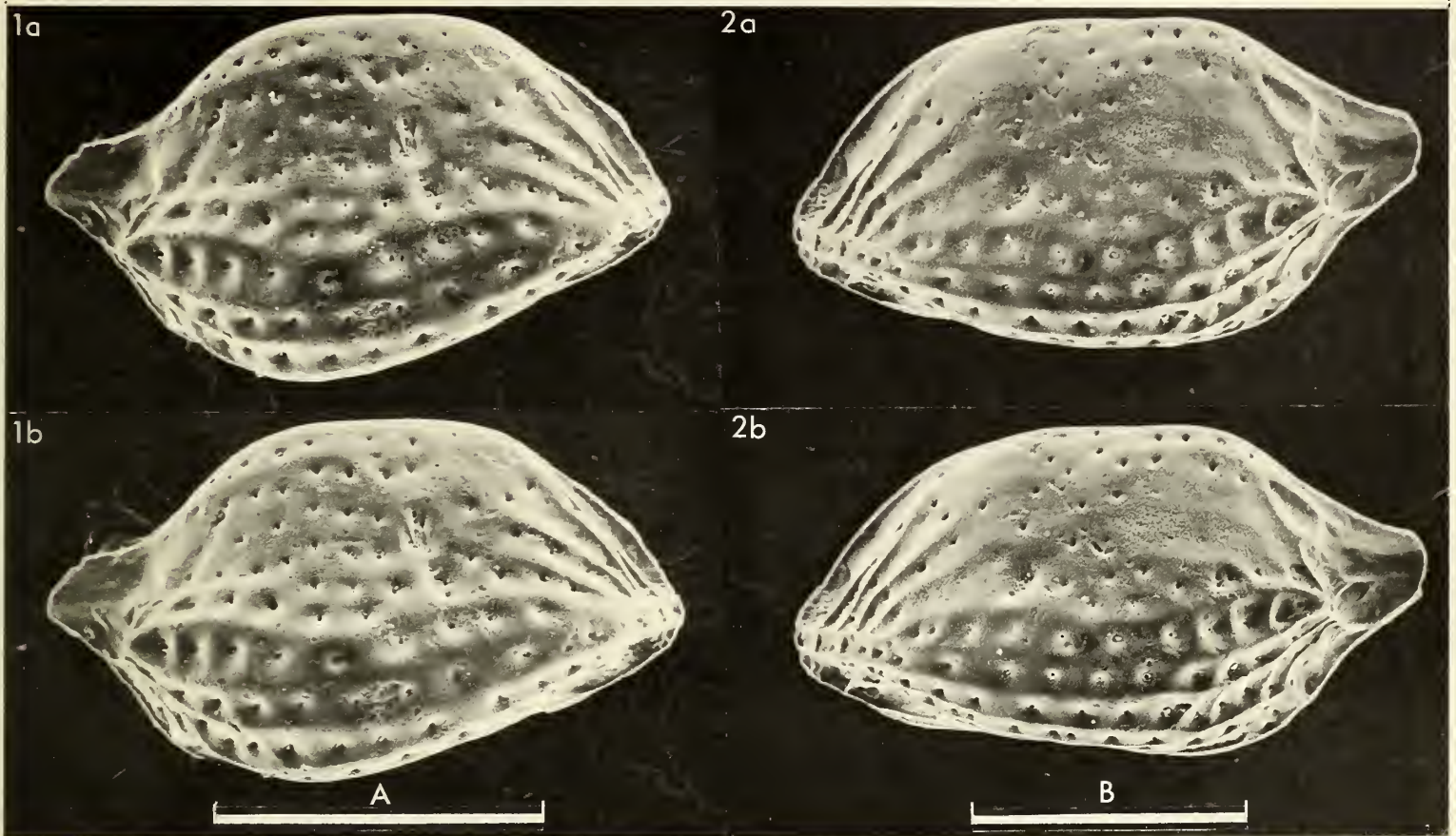
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Explanation of Plate 2:18:108

Fig. 1, ♀ LV, int. lat. (IO 5621); fig. 2, ♂ RV, int. lat. (IO 5622, 625 µm long); fig. 3, ♂ RV, int. musc. sc. (IO 5622).

Scale A (250 µm ; ×122), fig. 1; scale B (250 µm ; ×110), fig. 2; scale C (100 µm ; ×407), fig. 3.





Distribution: Recent in Gulf of Naples (type locality), Adriatic Sea (Masoli, op. cit.; Uffenorde, 1972, *Göttinger Arb. Geol. Paläont.*, no. 13, p. 90), Aegean Sea (Barbeito-Gonzales, 1971, *Mitt. hamb. zool. Mus. Inst.*, vol. 67, p. 293), Rhône Delta, S France (Kruit, 1955, *Verh. K. ned. geol. mijnb. Genoot.*, Geol. ser., vol. 15, p. 486).

Pliocene-Pleistocene in Turkey (herein).

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Explanation of Plate 2:18:110

Fig. 1, ♂ RV, ext. lat. (IO 5622); fig. 2, ♂ LV, ext. lat. (IO 5726, 600 µm long).

Scale A (250 µm ; ×131), fig. 1; scale B (250 µm ; ×139), fig. 2.

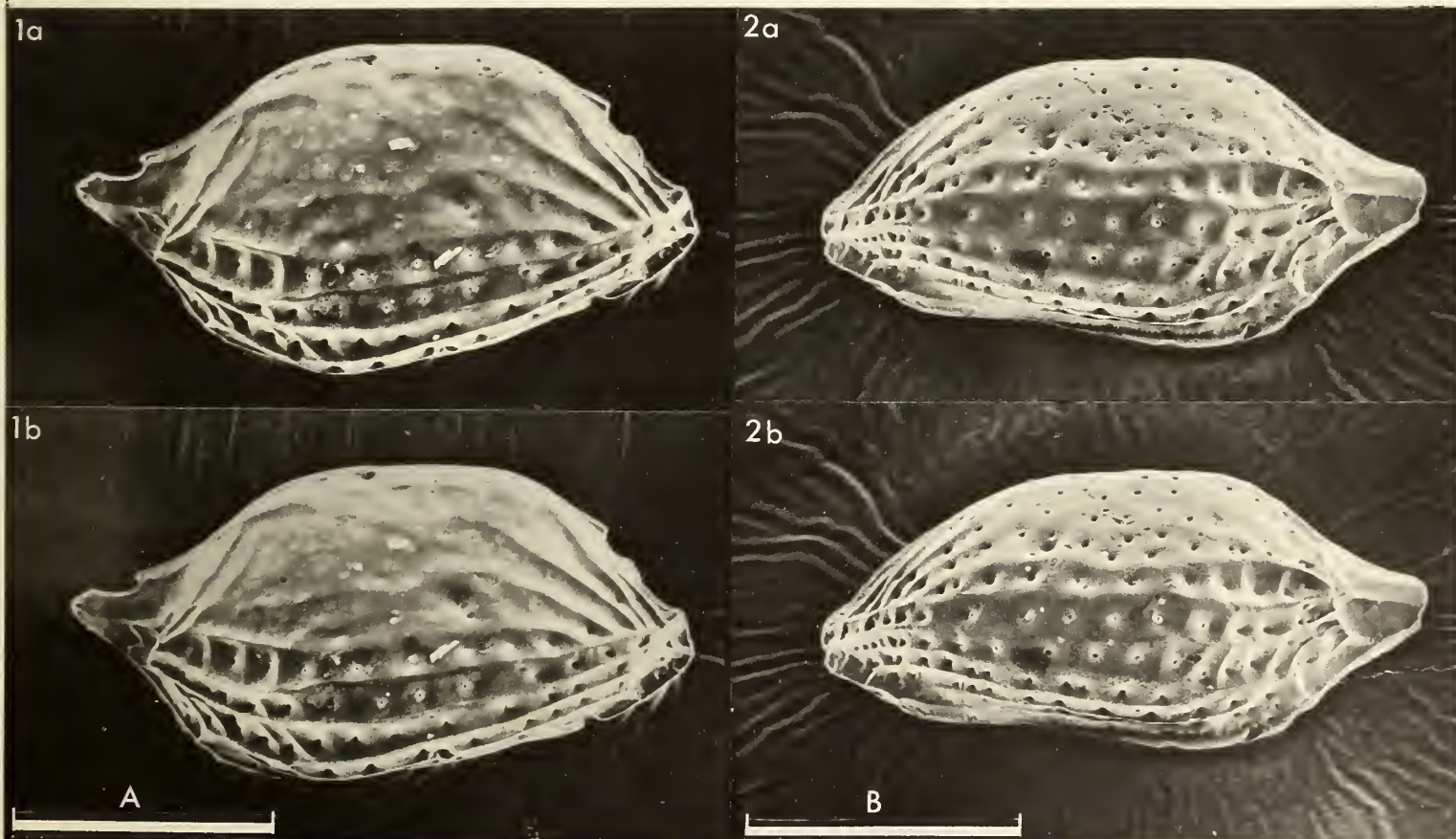
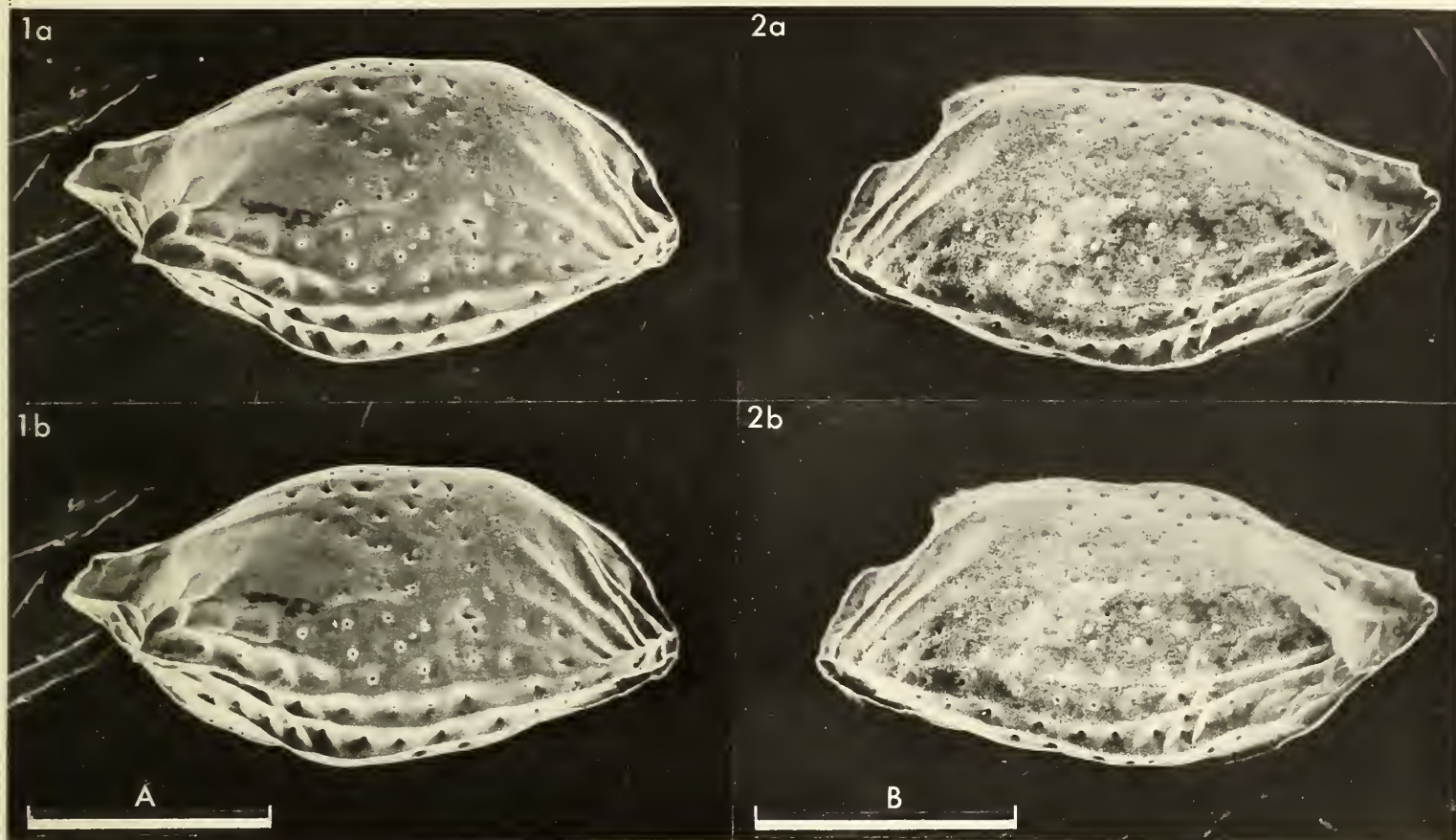
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Explanation of Plate 2:18:112

Fig. 1, ♀ RV, ext. lat. (IO 5725, 580 µm long); fig. 2, ♀ LV, ext. vent. obl. (IO 5621).

Scale A (250 µm ; ×143), fig. 1; scale B (250 µm ; ×147), fig. 2.







ON *SEMICYTHERURA EXUDATA* DORUK sp. nov.  
by Neriman Doruk  
(University of Leicester, England)

*Semicytherura exudata* sp. nov.

1968 *Semicytherura* sp. 1. M. Masoli, *Memorie Mus. trident. Sci. nat.*, vol. 17, fasc. 1, p. 47, pl. 3, fig. 26; pl. 10, figs. 158, 159.

Holotype: Brit. Mus. (Nat. Hist.) no. IO 5633, ♀ RV.

Type locality: Drillings off Iskenderun Bay, S coast of Turkey; approx. long. 35°59'E, lat. 36°37'N; 400 ft below sea-floor. Pleistocene.

Derivation of name: Latin, "exude", with reference to the appearance of the normal pores.

Diagnosis: Three main ribs form a distinctive triangular pattern, rest of shell finely reticulate. Normal pores raised with swollen rims (see Pl. 2:19:114, fig. 3).

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Explanation of Plate 2:19:114

Fig. 1, ♀ RV, ext. lat. (IO 5633, 490 µm long); fig. 2, ♂ LV, ext. lat. (IO 5634, 510 µm long); fig. 3, ♂ LV, detail of mid-dors. area with celate pores (IO 5634).

Scale A (250 µm ; ×170), fig. 1; scale B (250 µm ; ×164), fig. 2; scale C (20 µm ; ×656), fig. 3.

Figured specimens: Brit. Mus. (Nat. Hist.) nos. IO 5633 (♀ RV: Pl. 2:19:114, fig. 1; Pl. 2:19:116, figs. 2, 3), IO 5634 (♂ LV: Pl. 2:19:114, figs. 2, 3), IO 5635 (♀ LV: Pl. 2:19:116, fig. 1). All from the type locality; presumed shallow marine.

Remarks: Differs from the closely related species *S. punctata* (G. W. Müller) (1894, *Fauna Flora Golf. Neapel*, Monogr. 21, pp. 292, 293) and *S. tergestina* Masoli (op. cit., p. 160) in ornament detail. Strength of ribs variable, as is development of eye tubercle. Sexual dimorphism strong, males more elongate (see Pl. 2:19:114, figs. 1, 2).

Distribution: Known only, as far as I am aware, from the Pleistocene of S Turkey (herein) and the Recent of the N Adriatic (Masoli, op. cit.).

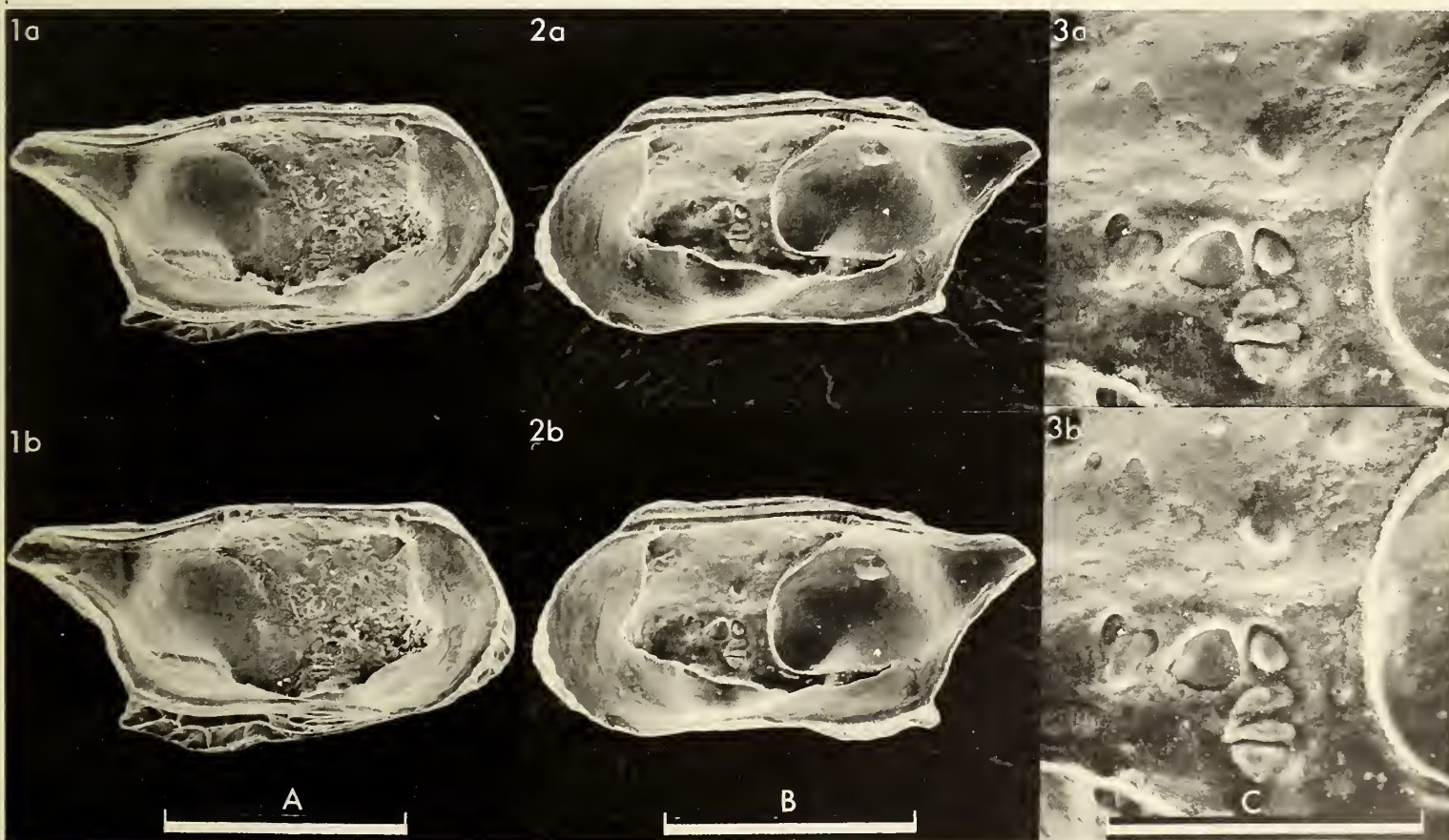
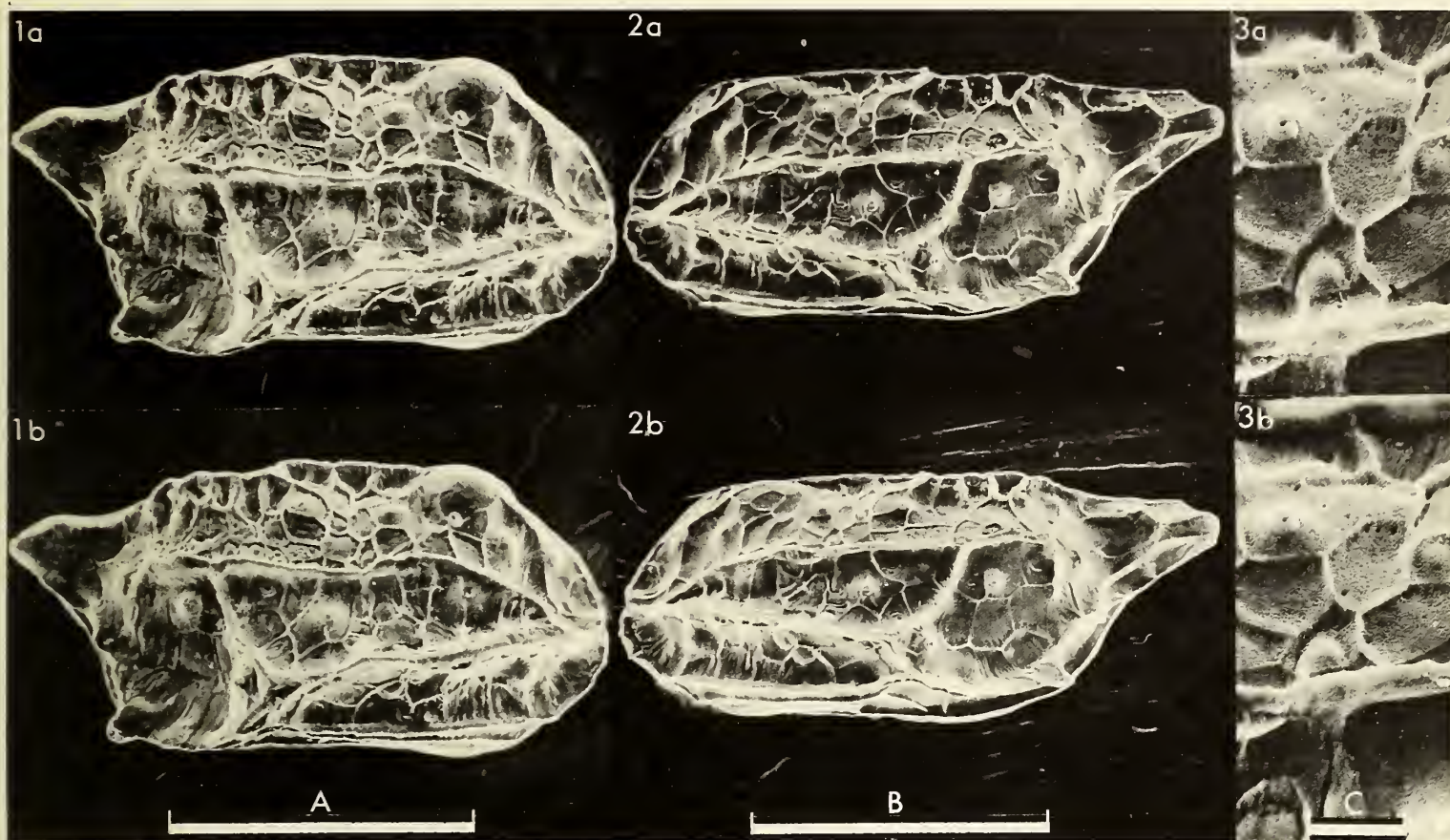
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Explanation of Plate 2:19:116

Fig. 1, ♀ LV, int. lat. (IO 5635, 530 µm long); fig. 2, ♀ RV, int. lat. (IO 5633); fig. 3, ♀ RV, int. musc. sc. (IO 5633).

Scale A (250 µm ; ×133), fig. 1; scale B (250 µm ; ×141), fig. 2; scale C (100 µm ; ×437), fig. 3.







ON *TIMIRIASEVIA MACKERROWI* BATE  
by R. G. Clements  
(University of Leicester, England)

*Timiriasevia mackerrowi* Bate, 1965

1965 *Timiriasevia mackerrowi* sp. nov. R. H. Bate, *Palaeontology*, vol. 8, pp. 756-758, pl. 111, figs. 2-12.

non 1971 *Timiriasevia* cf. *mackerrowi* Bate; F. W. Anderson in F. W. Anderson & R. A. Bazley, *Bull. geol. Surv. Gt Br.*, 34, p. 133, figs. 12, 13.

Holotype: Brit. Mus. (Nat. Hist.) IO 2734, ♀ carapace.

Type locality: Old Cement Quarry, Kirtlington, Oxfordshire, England; Nat. Grid Ref.: SP 495200. Fimbriata-waltoni Clay (see Bate, op. cit.), White Limestone, Bathonian, Middle Jurassic.

Figured specimens: Brit. Mus. (Nat. Hist.) nos. IO 6270 (♀ LV: Pl. 2:20:118, fig. 1), IO 6271 (♀ RV: Pl. 2:20:118, fig. 2), IO 6272 (♀ RV: Pl. 2:20:118, fig. 3), IO 6273 (♀ LV: Pl. 2:20:120, fig. 4; Pl. 2:20:122, fig. 7; Pl. 2:20:124, fig. 1).

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Explanation of Plate 2:20:118

Fig. 1, ♀ LV, ext. lat. (IO 6270, 710 µm long); fig. 2, ♀ RV, ext. lat. (IO 6271, 550 µm long); fig. 3, ♀ RV, ext. lat. (IO 6272, 550 µm long); fig. 4, ♂ RV, ext. lat. (IO 6276, 530 µm long); fig. 5, ♂ RV, ext. lat. (IO 6277, 530 µm long).

Scale A (100 µm ; ×120), fig. 1; scale B (100 µm ; ×80), figs. 2-5.

Figured specimens: IO 6274 (♀ RV: Pl. 2:20:120, fig. 5; Pl. 2:20:124, fig. 2), IO 6275 (contd.) (♀ car.: Pl. 2:20:122, fig. 3), IO 6276 (♂ RV: Pl. 2:20:118, fig. 4), IO 6277 (♂ RV: Pl. 2:20:118, fig. 5), IO 6278 (♂ LV: Pl. 2:20:120, fig. 1), IO 6279 (♂ LV: Pl. 2:20:120, fig. 2), IO 6280 (♂ car.: Pl. 2:20:122, figs. 1, 5), IO 6281 (♂ car.: Pl. 2:20:122, fig. 2), IO 6282 (♂ car.: Pl. 2:20:122, fig. 6), IO 6283 (♂ RV: Pl. 2:20:124, fig. 3), IO 6284 (♂ RV: text-fig. 1), IO 6285 (juv RV: Pl. 2:20:120, fig. 3), IO 6286 (juv car.: Pl. 2:20:122, fig. 4). All from same sample as measured specimens, Forest Marble, Elm Farm Quarry.

Diagnosis: *Timiriasevia* with greatest height distinctly posterior. Anterior marginal sulcus. Costae rounded, sub-parallel to margins and roughly concentric about a sub-triangular to elongate mid-lateral region. Small, rounded, perforate tubercles particularly in anterior and posterior regions - the latter ones normally forming a pattern of four on each valve. About 20 radial pore canals from anterior vestibule. Anterior and posteroventral flanges marked. Right valve posteroventral flange extensive, frilled, oblique. Accommodation groove in left valve only. Sexual dimorphism strong; female with pouch-like posteroventral inflation beyond margin.

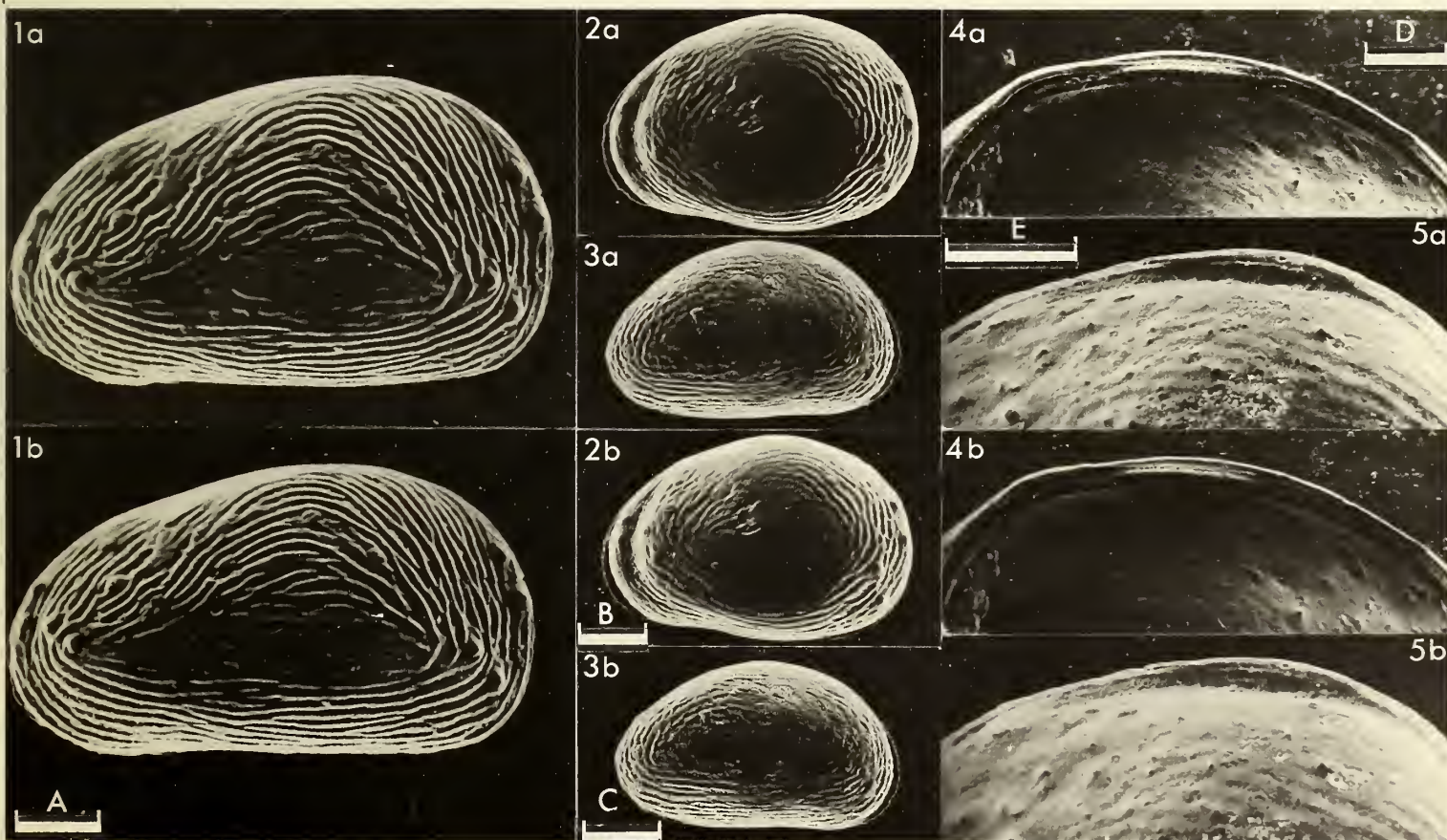
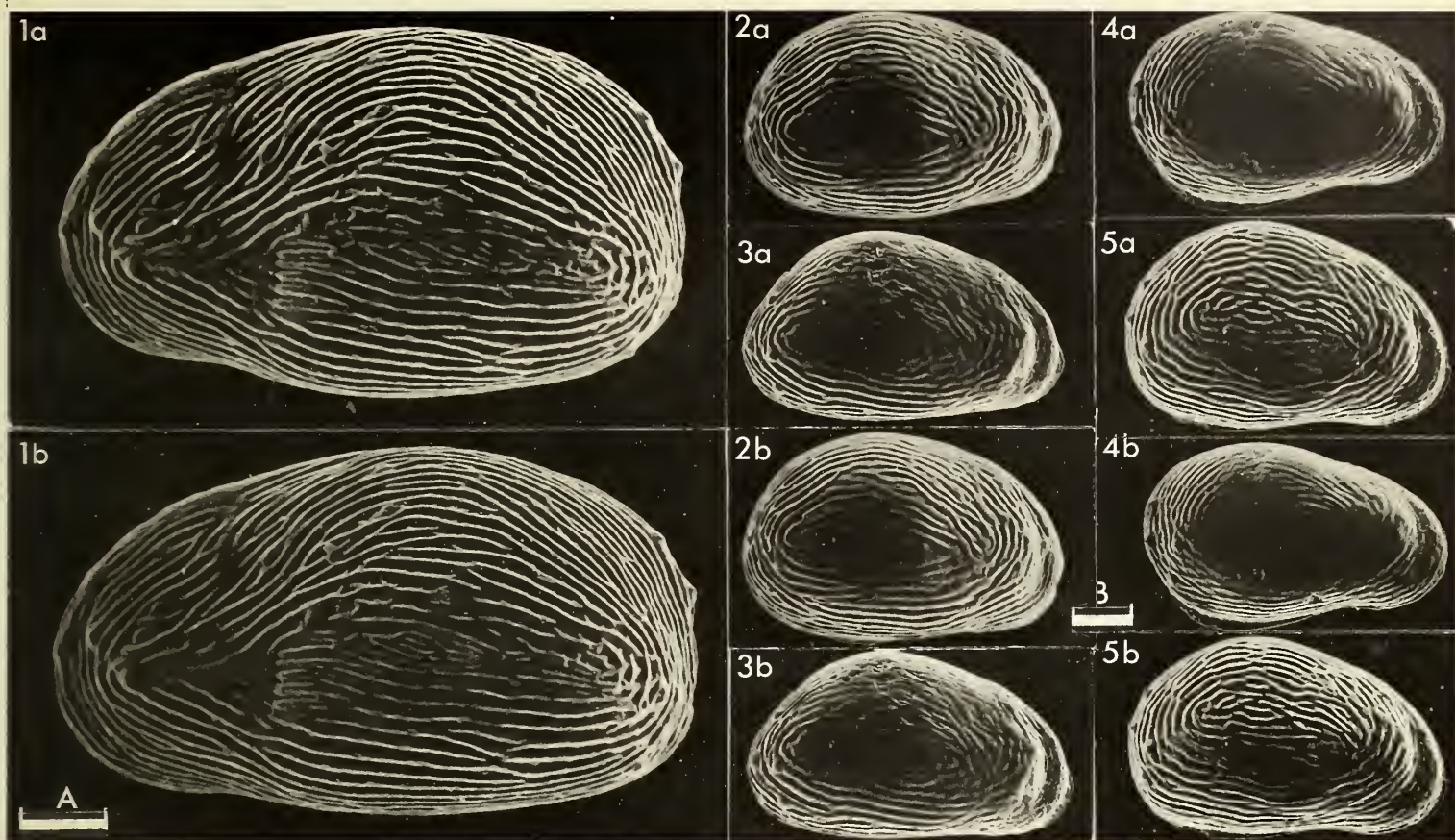
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Explanation of Plate 2:20:120

Fig. 1, ♂ LV, ext. lat. (IO 6278, 610 µm long); fig. 2, ♂ LV, ext. lat. (IO 6279, 520 µm long); fig. 3, juv RV, ext. lat. (IO 6285, 370 µm long); fig. 4, ♀ LV, hinge (IO 6273); fig. 5, ♀ RV, hinge (IO 6274).

Scale A (100 µm ; ×120), fig. 1; scale B (100 µm ; ×80), fig. 2; scale C (100 µm ; ×110), fig. 3; scale D (100 µm ; ×108), fig. 4; scale E (100 µm ; ×180), fig. 5.







Remarks: Lateral outline variable - reflecting position of greatest height of carapace. Greatest height at or anterior to midline in juveniles. Strength of ornament varies; juveniles and a few adults develop a weak inter-costal punctation. Left valve larger than right valve. Females larger and apparently less numerous than males. Paratype IO 2737 described by Bate (op. cit.) as a juvenile is here considered an adult male. One sectioned female carapace contained a juvenile ostracod carapace. Presumed low salinity, non-marine; always found associated with other ostracods of similar presumed habitat (see Bate op. cit. and McKerrow et al., 1969, *Palaeontology*, vol. 12, pp. 56-83).

Distribution: Upper Bathonian: Fimbriata-waltoni clay (White Limestone), Kemble Beds (Forest Marble), and horizons in the Wychwood Beds (Forest Marble) of the type locality; Forest Marble [Beds 9 and 10(a)] at Elm Farm Quarry, Stratton Audley, Oxfordshire, Nat. Grid Ref.: SP 601255 (see Palmer, T. J., 1973, *Proc. Geol. Ass.*, vol. 84, pp. 53-64). Middle Bathonian: Viviparus Marl, Sharps Hill Beds, at Castle Barn Quarry, Sarsden, Oxfordshire; Nat. Grid Ref.: SP 300226.

Acknowledgement: To Prof. P.C. Sylvester-Bradley & Dr. R.H. Bate for loan of material.

#### Explanation of Plate 2:20:122

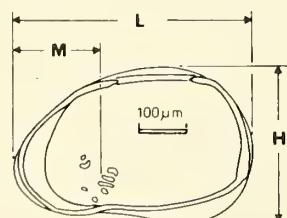
Fig. 1, ♂ car., dors. (IO 6280, 570 µm long); fig. 2, ♂ car., vent. (IO 6281, 540 µm long); fig. 3, ♀ car., vent. (IO 6275, 570 µm long); fig. 4, juv car., dors. (IO 6286, 320 µm long); fig. 5, ♂ car., post. (IO 6280); fig. 6, ♂ car., post. (IO 6282, 490 µm long); fig. 7, ♀ LV, int. musc. sc. (IO 6273).

Scale A (100 µm ; ×70), figs. 1-3, 5, 6; scale B (100 µm ; ×114), fig. 4; scale C (50 µm ; ×375), fig. 7.

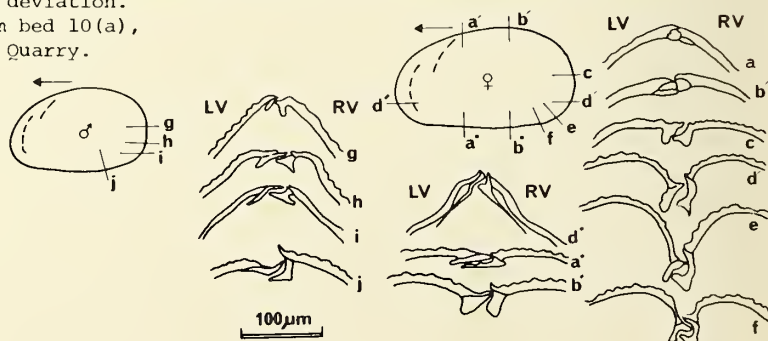
Sex	L (mm)					M (mm)			H (mm)					L/M			L/H		
	N	$\bar{x}$	SD	Max.	Min.	N	$\bar{x}$	SD	N	$\bar{x}$	SD	Max.	Min.	N	$\bar{x}$	SD	N	$\bar{x}$	SD
♀♀ RV	21	0.551	0.035	0.62	0.38	15	0.208	0.007	19	0.344	0.020	0.38	0.30	15	2.701	0.068	18	1.605	0.066
♀♀ LV	15	0.563	0.054	0.71	0.49	13	0.176	0.012	13	0.367	0.031	0.43	0.33	13	3.241	0.238	13	1.542	0.073
♂♂ RV	54	0.491	0.034	0.61	0.43	41	0.199	0.014	53	0.328	0.021	0.39	0.29	44	2.449	0.088	51	1.486	0.065
♂♂ LV	30	0.495	0.035	0.61	0.45	25	0.165	0.015	30	0.333	0.021	0.37	0.30	25	3.019	0.154	30	1.486	0.066

N = no. specimens;  $\bar{x}$  = mean; SD = standard deviation.

Table 1. Measurements on a population from bed 10(a), (Palmer op. cit.), Forest Marble, Elm Farm Quarry.



Text-fig. 1. ♂ RV internal (IO 6284) showing muscle scars, and measured dimensions.



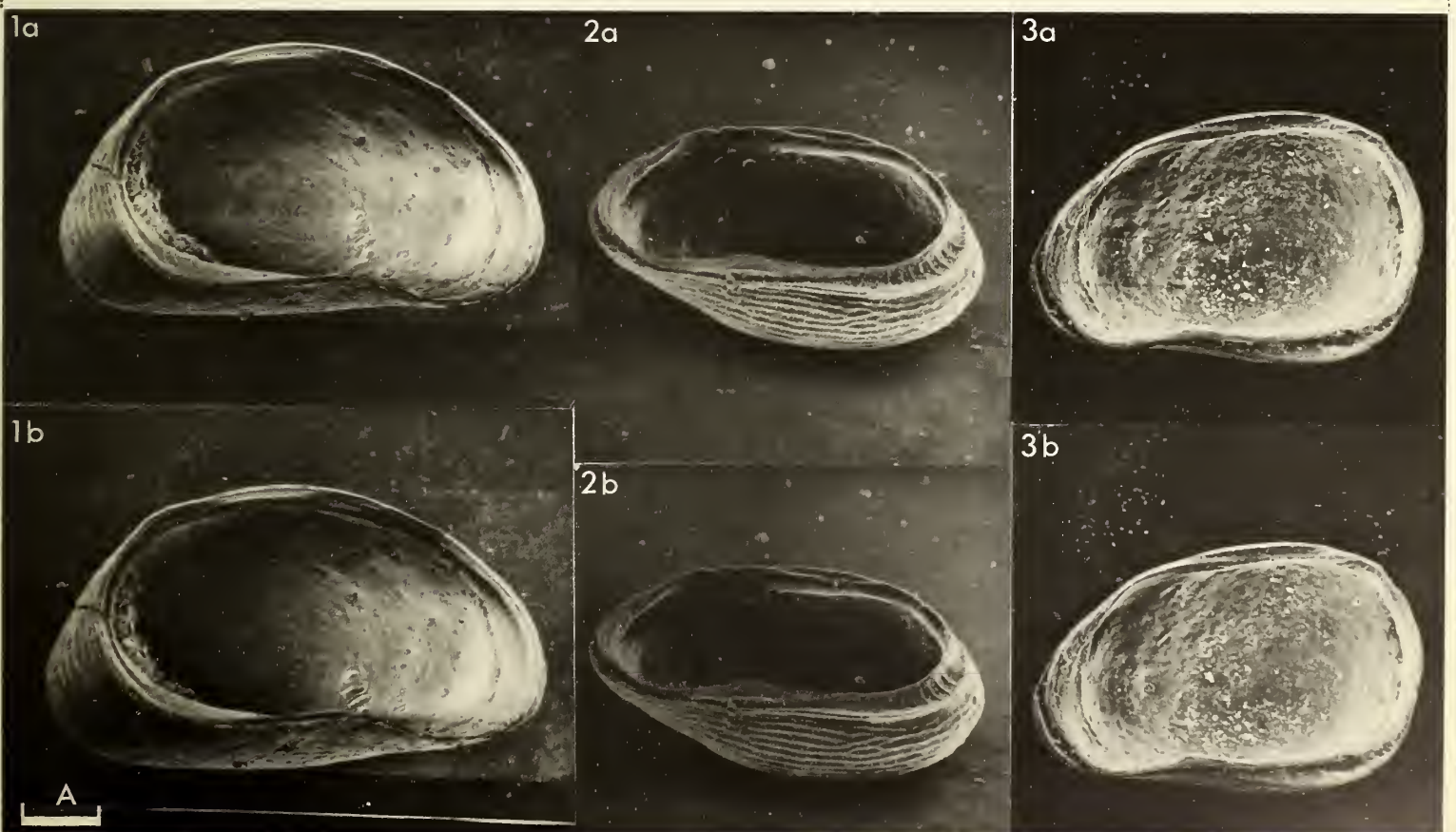
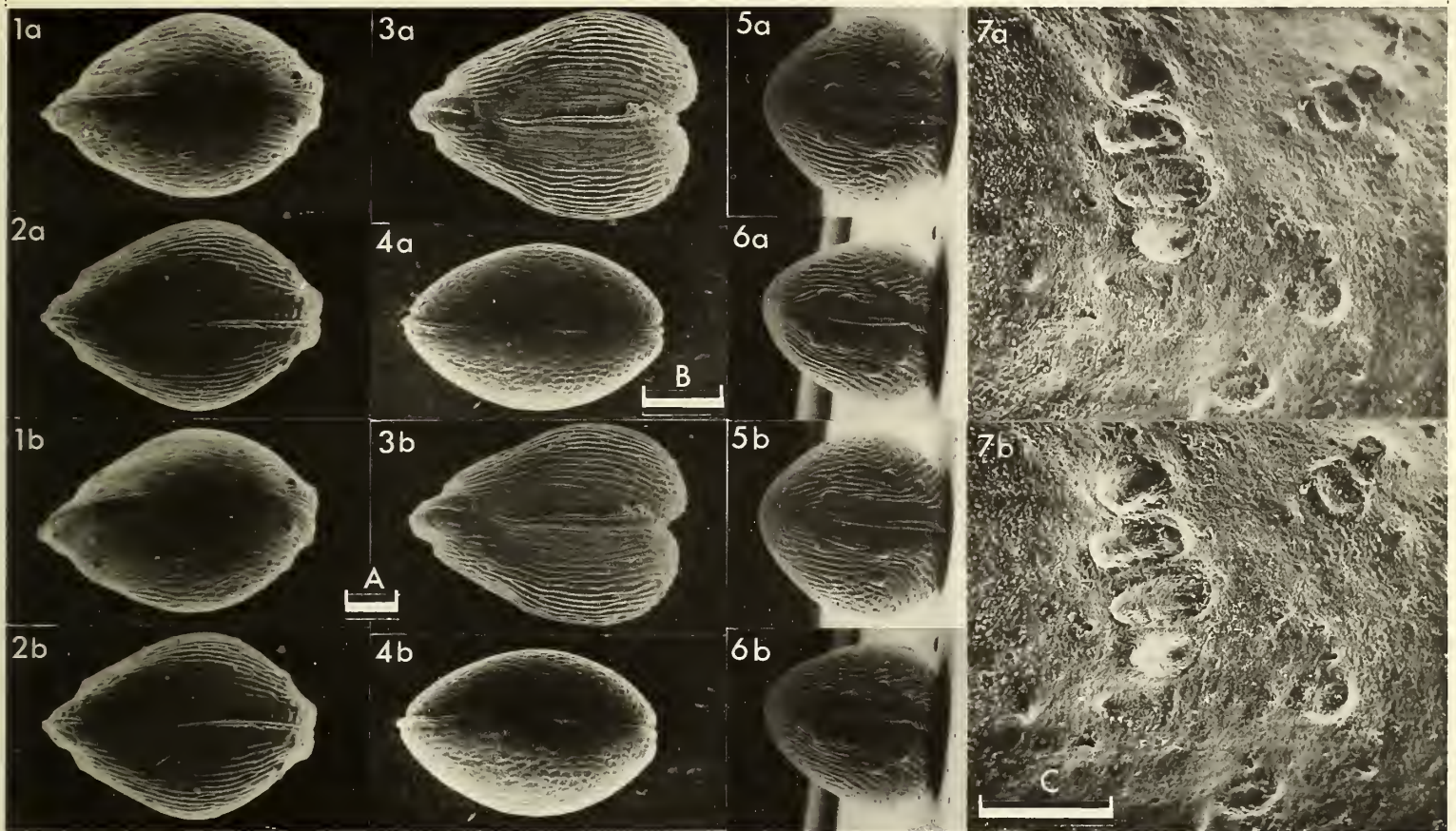
Text-fig. 2. Sections through a series of ♂ and ♀ carapaces to show structure of duplicature.

#### Explanation of Plate 2:20:124

Fig. 1, ♀ LV, int. lat. (IO 6273, 670 µm long); fig. 2, ♀ RV, int. obl. ventro-lat. (IO 6274, 540 µm long); fig. 3, ♂ RV, int. lat. (IO 6283, 540 µm long).

Scale A (100 µm ; ×100), figs. 1-3).







ON *PENNYELLA PENNYI* NEALE gen. *et* sp. nov.  
by John W. Neale  
(University of Hull, England)

Genus *PENNYELLA* gen. nov.

Type-species: *Pennyella pennyi* sp. nov.

Derivation of name: In honour of my friend and colleague Dr. L. F. Penny.

Diagnosis: Shell of trachyleberid shape, saggital in dorsal view showing marked sexual dimorphism, strong reticulation with spinose muri and sparse normal pore canals. Four adductor scars, the middle two elongate, and hook shaped frontal scar. *Pennyella* differs from most other trachyleberids in lacking an eye tubercle.

Remarks: From *Agulhasina* Dingle, 1971 (Maastrichtian, Agulhas Bank) it differs in having almost twice as many radial pore canals (30 anteriorly 12 posteriorly), in the greatest width lying posteriorly and not centrally and in the muscle scar pattern. It lacks the ventral rib and rounded posteroventral outline in lateral view of *Agrenocythere* Benson, 1971 (Eocene-Recent).

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Explanation of Plate 2:21:126

Fig. 1, ♀ LV, ext. lat. (HU.67.C.1, 558 µm long); fig. 2, ♀ LV, int. lat. (HU.67.C.5, 603 µm long).

Scale A (100 µm ; ×181), fig. 1; scale B (100 µm ; ×156), fig. 2.

*Pennyella pennyi* sp. nov.

Holotype: University of Hull coll. no. HU.67.C.1, ♀ LV.

[Paratypes: University of Hull coll. nos. HU.67.C.2-10].

Type locality: One Tree Hill, Gingin, Western Australia; approx. long. 115°52'E, lat. 31°32'S. Santonian, Upper Cretaceous. Fine white chalk with an abundant foraminiferal and ostracod fauna indicative of warm shelf seas.

Figured specimens: University of Hull coll. nos. HU.67.C.1 (♀ LV: Pl. 2:21:126, fig. 1; Pl. 2:21:132, fig. 1), HU.67.C.2 (♂ RV: Pl. 2:21:128, fig. 3; Pl. 2:21:132, fig. 3), HU.67.C.3 (♀ RV: Pl. 2:21:132, fig. 2), HU.67.C.4 (♂ RV: Pl. 2:21:130, fig. 1), HU.67.C.5 (♀ LV: Pl. 2:21:126, fig. 2), HU.67.C.9 (♀ LV: Pl. 2:21:128, fig. 2), HU.67.C.10 (♀ RV: Pl. 2:21:128, fig. 1; Pl. 2:21:130, fig. 2). All from the Gingin Chalk, Western Australia.

Diagnosis: Anterior and posteroventral margins separated from the body of the valve by well-developed sulci divided by very fine transverse ribs.

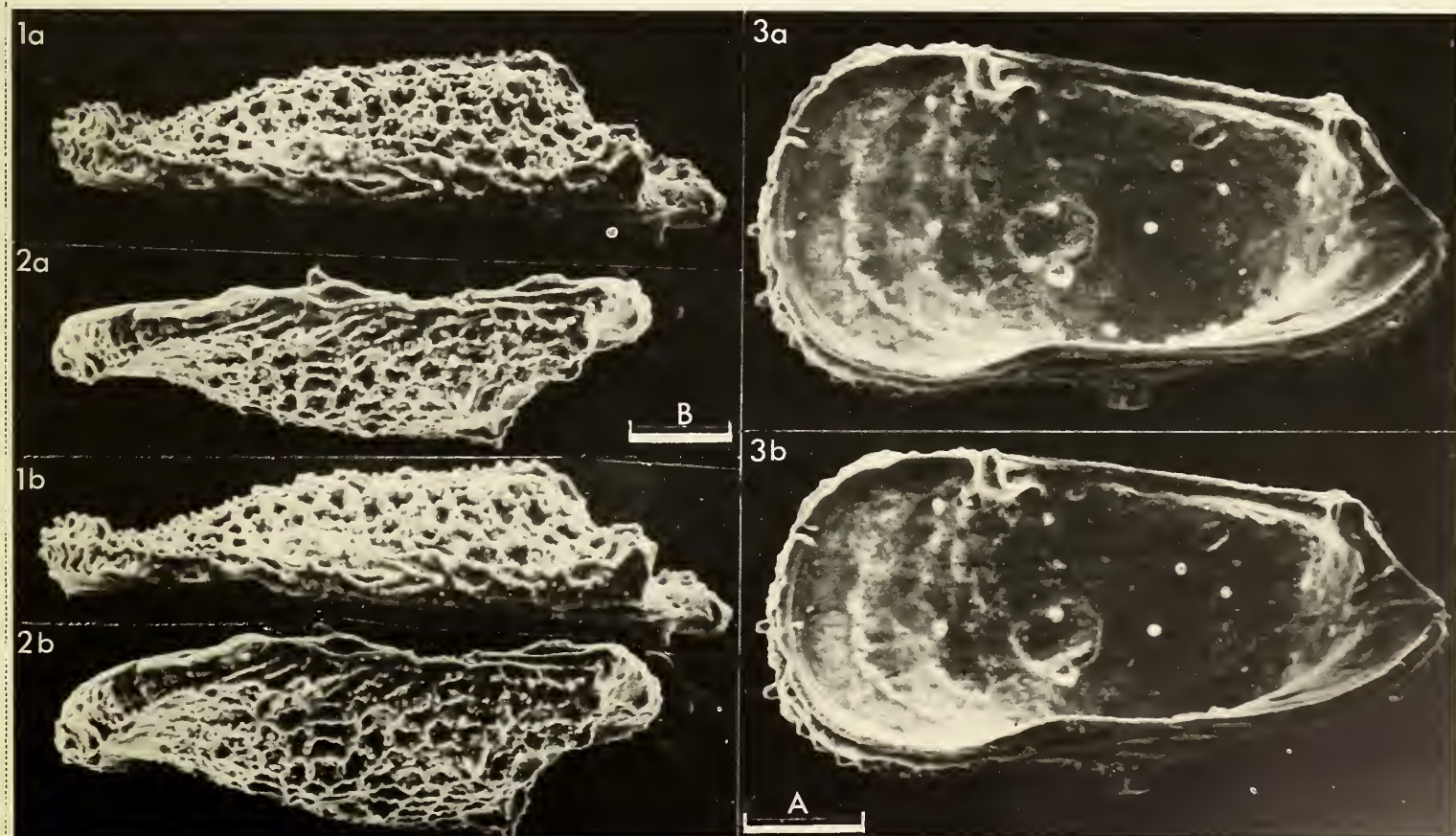
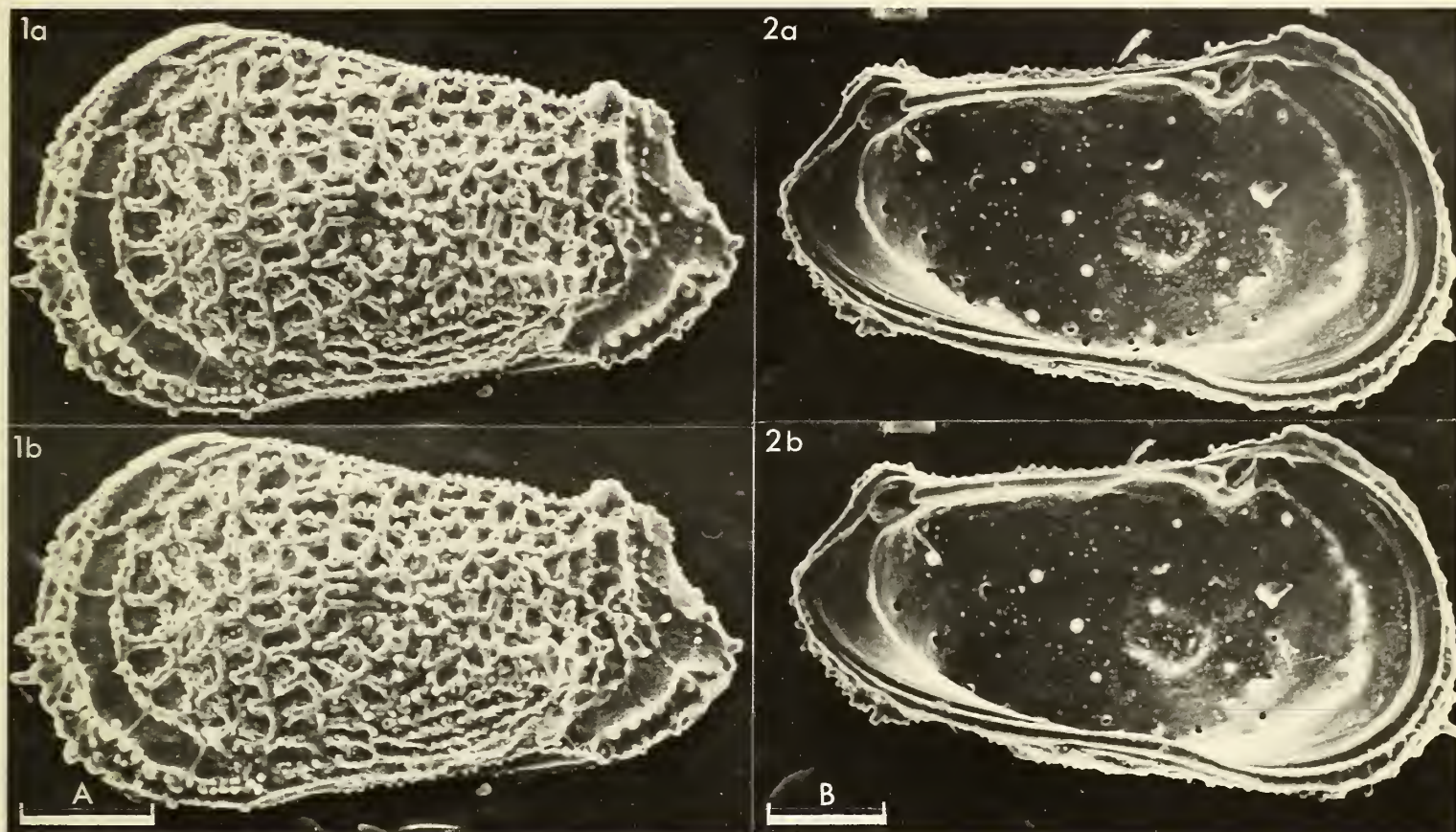
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Explanation of Plate 2:21:128

Fig. 1, ♀ RV, ext. dors. (HU.67.C.10, 610 µm long); fig. 2, ♀ LV, ext. dors. (HU.67.C.9, 584 µm long); fig. 3, ♂ RV, int. lat. (HU.67.C.2, 610 µm long).

Scale A (100 µm ; ×158), figs. 1, 3; scale B (100 µm ; ×143), fig. 2.



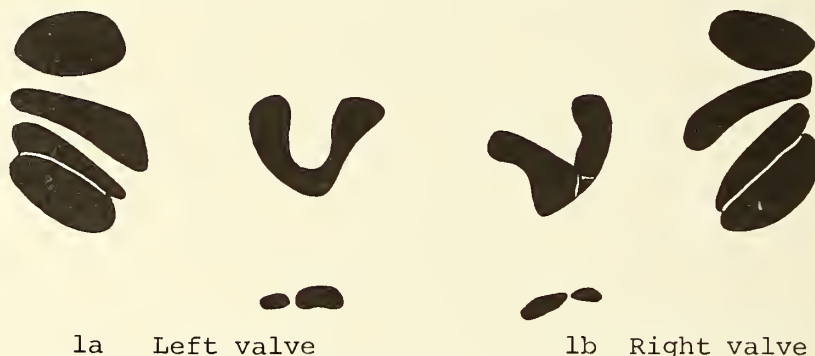




Remarks: So far this species has only been found in the Gingen Chalk where it makes up about 1% of the fauna and its commonest associates are *Cytherella*, *Cytherelloidea*, *Apateloschizocythere* and *Paramunseyella*.

The genus is more widespread. The form assigned by Swain (1973, *J. Paleont.*, vol. 47, no. 4, p. 713, pl. 1, figs. 12, 13a-c) to *Cletocythereis* ? from Maastrichtian in a core from the Shatsky Plateau in the Pacific at long. 158°01.3'E, lat. 32°34.5'N belongs here. Swain's specimens are larger than adult *P. pennyi* but also show the vertical ridge posteriorly suggesting that this is also a feature of generic importance.

Text-fig. 1. Muscle scar pattern in *P. pennyi*.



Explanation of Plate 2:21:130

Fig. 1, ♂ RV, ext. lat. (HU.67.C.4, 603 µm long); fig. 2, ♀ RV, ext. lat. (HU.67.C.10, 610 µm long).

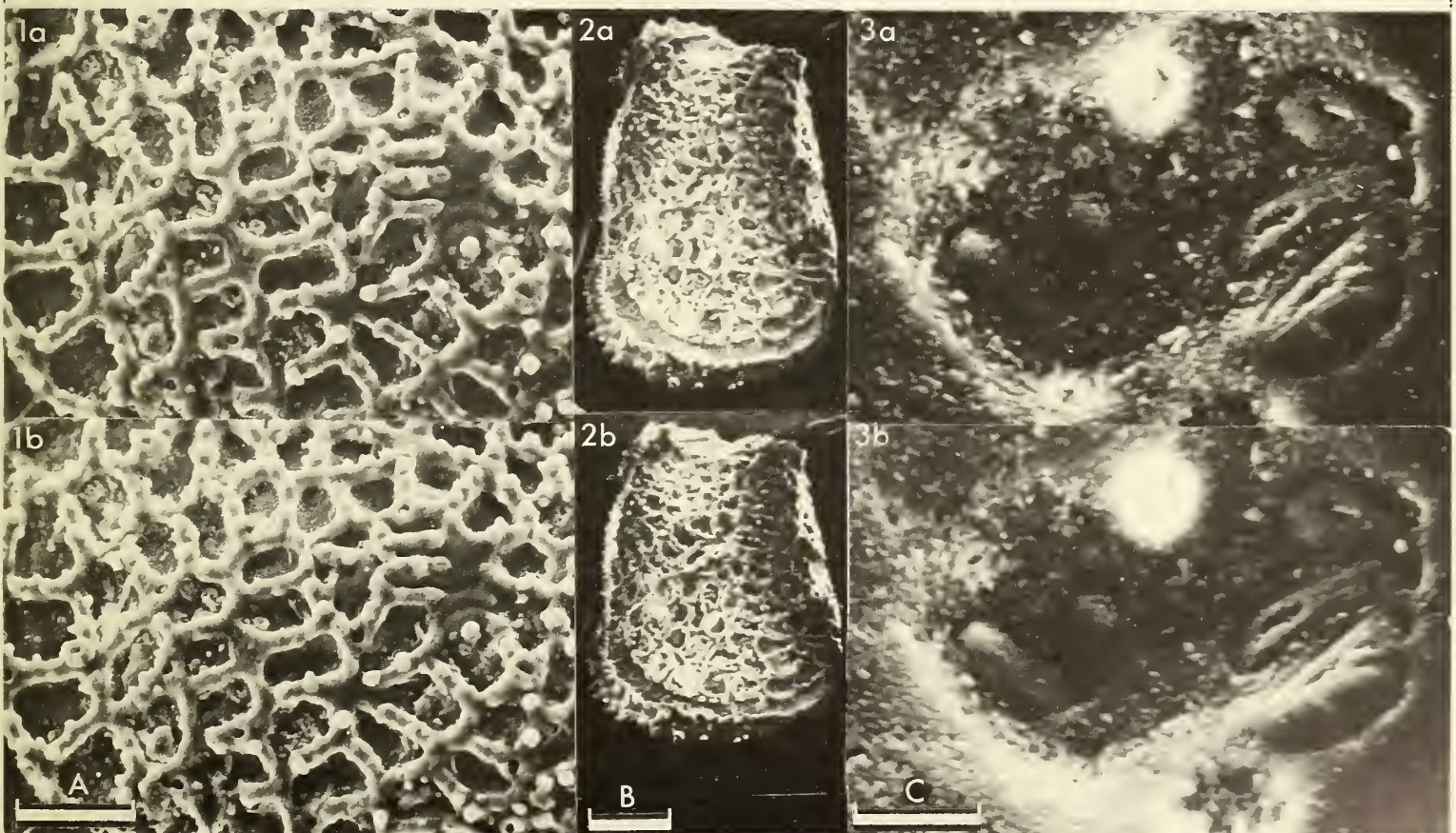
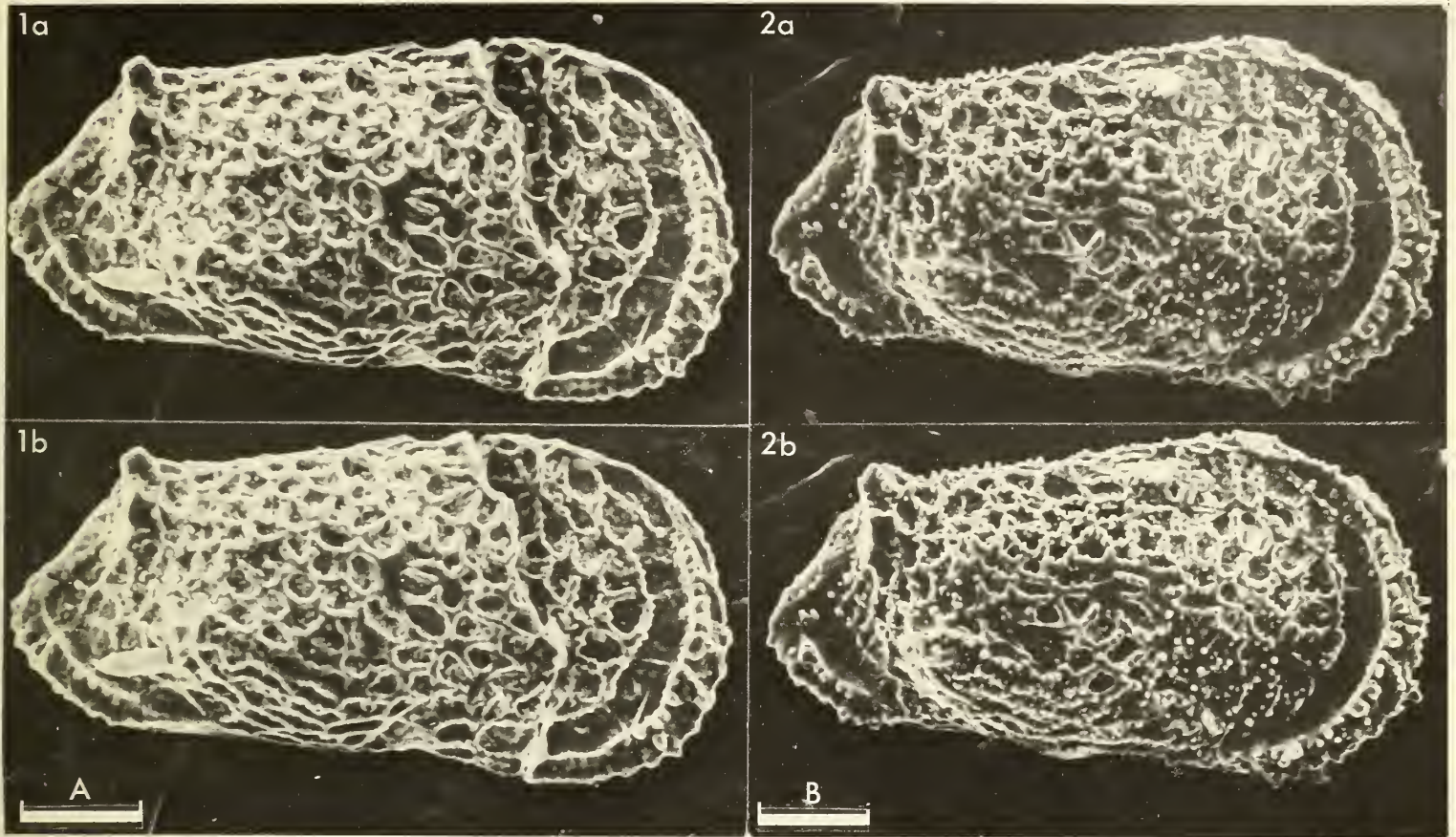
Scale A (100 µm ; ×166), fig. 1; scale B (100 µm ; ×152), fig. 2.

Explanation of Plate 2:21:132

Fig. 1, ♀ LV, ext. lat. to show ornamentation, normal pore canals & musc. sc. (HU.67.C.1); fig. 2, ♀ RV, ext. ant. obl. (HU.67.C.3, 584 µm long); fig. 3, ♂ RV, int. musc. sc. (HU.67.C.2, 610 µm long).

Scale A (50 µm ; ×325), fig. 1; scale B (100 µm ; ×114), fig. 2; scale C (20 µm ; ×890), fig. 3.







ON *BATHYCYTHERE VANSTRAATENI* SISSINGH  
by W. Sissingh  
(Shell U. K. Exploration & Production Co. Ltd., London)

Genus *BATHYCYTHERE* Sissingh, 1971

- 1971 *Bathycythere* gen. nov. W. Sissingh, *Proc. K. ned. Akad. Wet.*, Amsterdam, ser. B, 74, no. 4, p. 409.  
1971 "*Xandarosina*". R. H. Benson & P. C. Sylvester-Bradley, *Bull. Cent. Rech. Pau - SNPA*, vol. 5 suppl., pp. 63-91 [*nomen nudum*].

Type-species (original designation): *Bathycythere vanstraateni* Sissingh, 1971

Diagnosis: Subovate to subrectangular carapace with prominent marginal and ventro-lateral spines. No eye tubercle. Bulbose radial pore canals. Weak holamphidont hinge.

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Explanation of Plate 2:22:134

Figs. 1-3, RV (IO 6267, 1130  $\mu$ m long). Fig. 1, ext. ant.; fig. 2, ext. lat.; fig. 3, ext. vent. obl.

Scale A (250  $\mu$ m ;  $\times 57$ ), figs. 1-3.

*Bathycythere vanstraateni* Sissingh, 1971

- 1971 *Bathycythere vanstraateni* sp. nov. W. Sissingh, *Proc. K. ned. Akad. Wet.*, Amsterdam, ser. B, 74, no. 4, p. 410, pls. 1, 2, text-figs. 2-4.  
1971 "*Xandarosina*" sp. R. H. Benson & P. C. Sylvester-Bradley, *Bull. Cent. Rech. Pau - SNPA*, vol. 5 suppl., p. 69, figs. 3a, b.

Holotype: A left valve, deposited in the micropalaeontological collections (S 27532) of the University of Utrecht.

Type locality: Core 355 (interval 240-270 cm), taken in the deep basin of the SE Adriatic Sea at a depth of 1096 m; approx. long. 18°25'E, lat. 41°30'N. Late Pleistocene.

Figured specimens: Brit. Mus. (Nat. Hist.) IO 6267 (RV: Pl. 2:22:134, figs. 1-3; Pl. 2:22:138, fig. 1; Pl. 2:22:140, figs. 1, 2), IO 6268 (LV: Pl. 2:22:136, figs. 1-3), IO 6269 (LV: Pl. 2:22:138, figs. 2, 3; Pl. 2:22:140, figs. 3, 4).

IO 6267 and IO 6268 from Core 296 (interval 330-360 cm and 400-440 cm respectively); taken from 1063 m depth at approx. long. 17°43'E, lat. 41°16'N. IO 6269 from Core 293 (interval 80-110 cm); taken from 1198 m depth at approx. long. 18°9'E, lat. 41°44'N. All specimens are from late Pleistocene subsurface deposits within the area of the type locality.

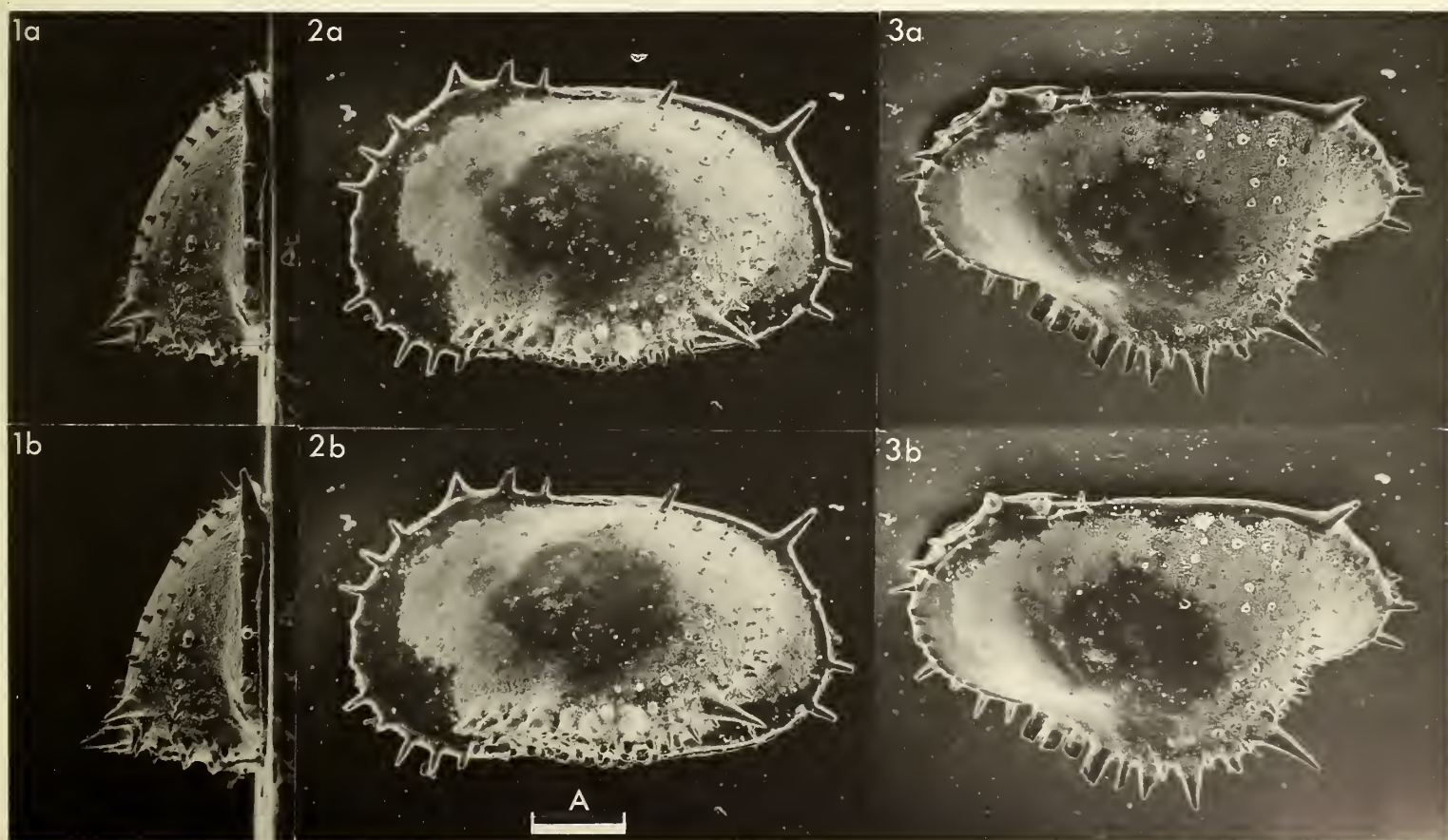
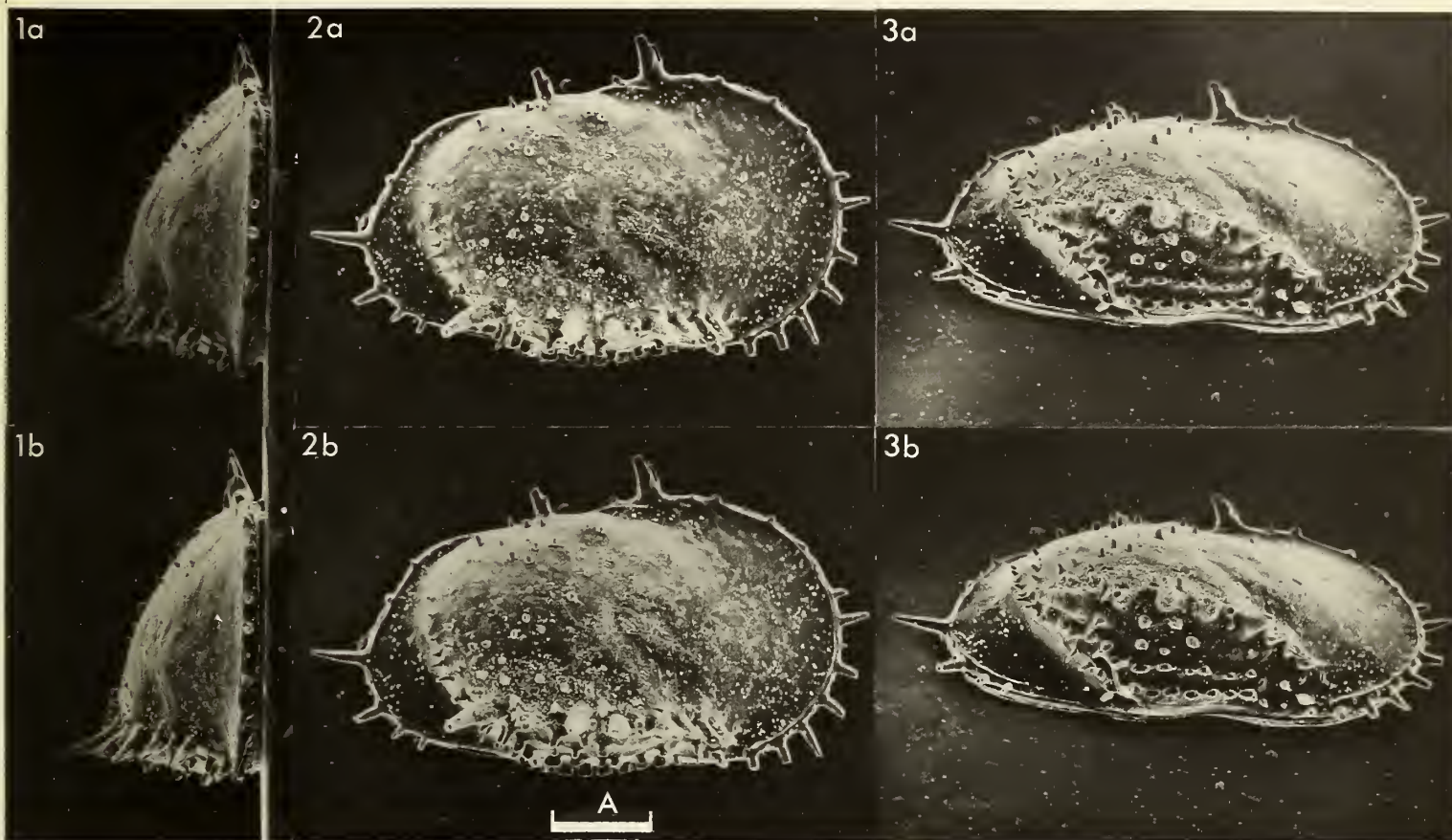
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Explanation of Plate 2:22:136

Figs. 1-3, LV (IO 6268, 1220  $\mu$ m long). Fig. 1, ext. post.; fig. 2, ext. lat.; fig. 3, ext. dors. obl.

Scale A (250  $\mu$ m ;  $\times 53$ ), figs. 1-3.







**Diagnosis:** Anterior part of lateral surface smooth; spinose ventrolaterally and posteriorly.

**Remarks:** Sexual dimorphism is not convincingly observed in this species. Presumed males seem to be somewhat smaller, relatively lower and slightly more compressed in dorsal view than females. Dorsomedian and ventromedian adductor muscle scar may be subdivided (see Pl. 2:22:138, fig. 3 & text-fig. 1).

**Distribution:** Late Pleistocene of the deep SE Adriatic Sea.

Also reported as a species of "*Xandarosina*" (*nomen nudum*) from Pleistocene and younger deep water deposits of the Mediterranean Sea (Benson, R. H. & Sylvester-Bradley, P. C., op. cit.).

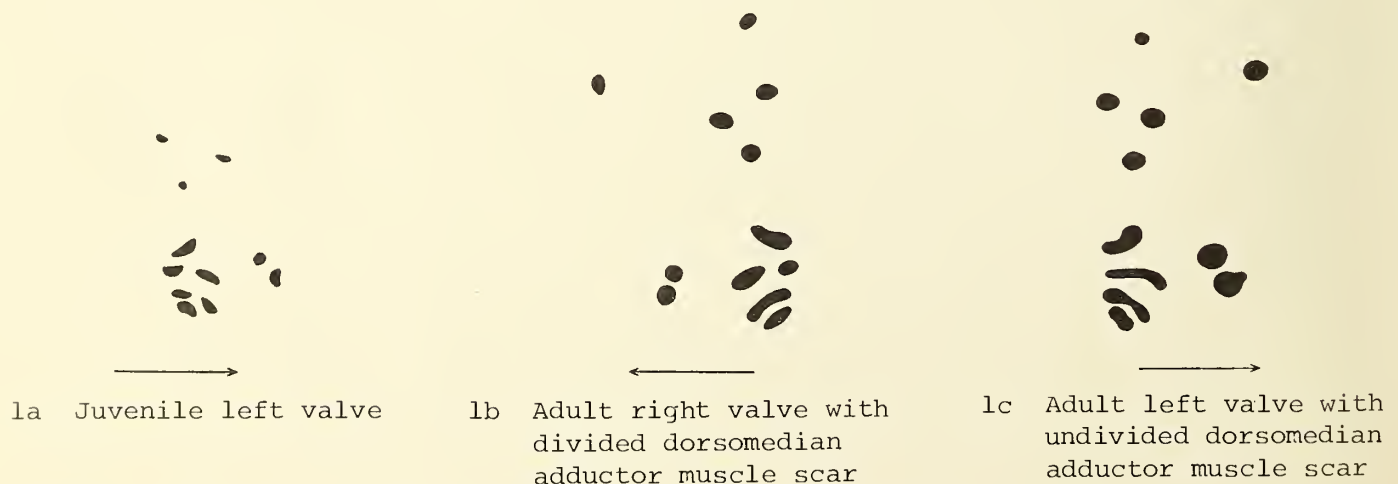
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Explanation of Plate 2:22:138

Fig. 1, RV int. lat. (IO 6267); fig. 2, LV int. lat. (IO 6269, 1130  $\mu$ m long); fig. 3, LV int. musc. sc. (IO 6269).

Scale A (250  $\mu$ m ;  $\times 57$ ), figs. 1, 2; scale B (50  $\mu$ m ;  $\times 200$ ), fig. 3.

Text-fig. 1. Muscle scar pattern in *B. vanstraateni*; after Sissingh (op. cit.).  $\times 115$ .



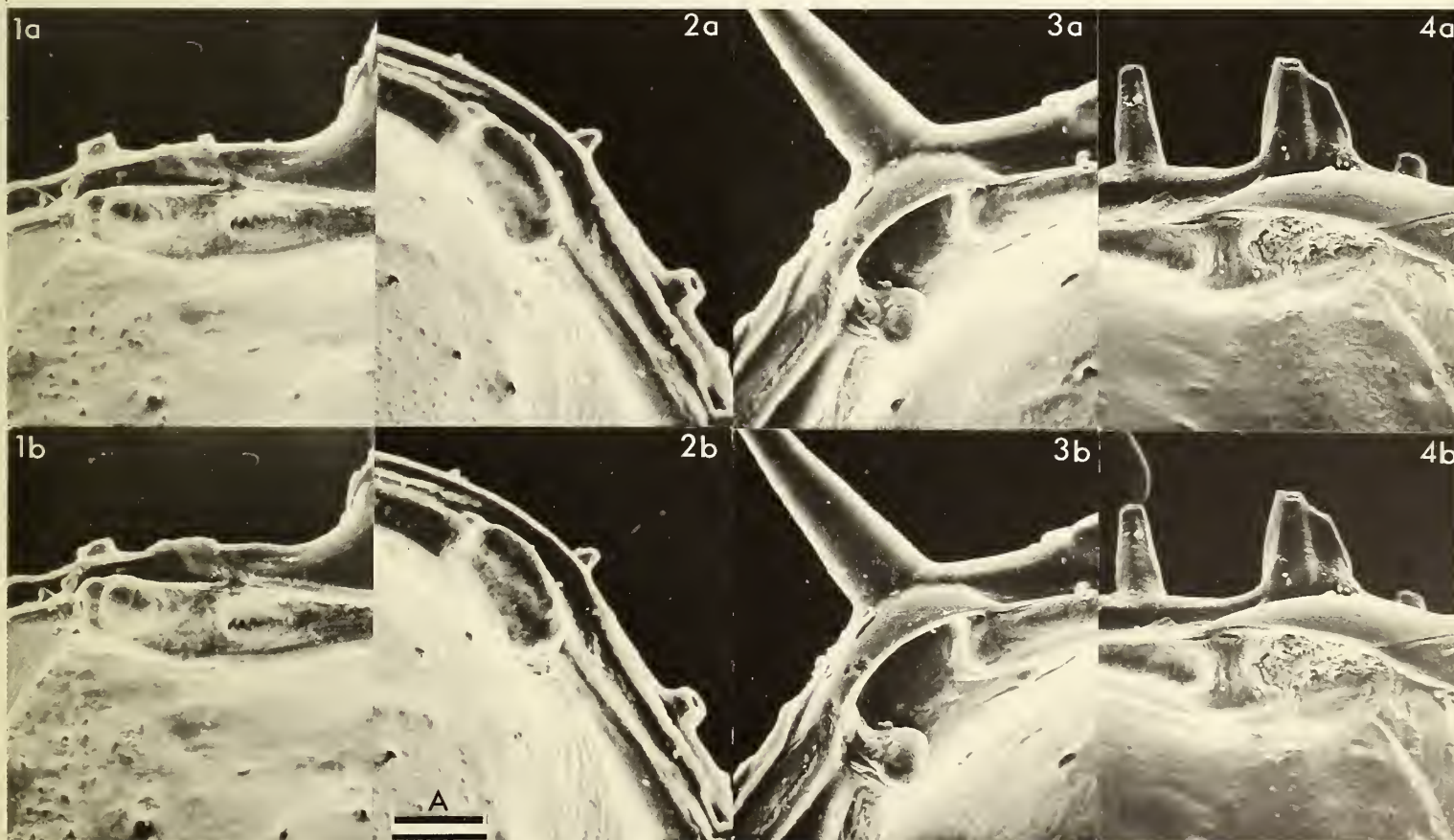
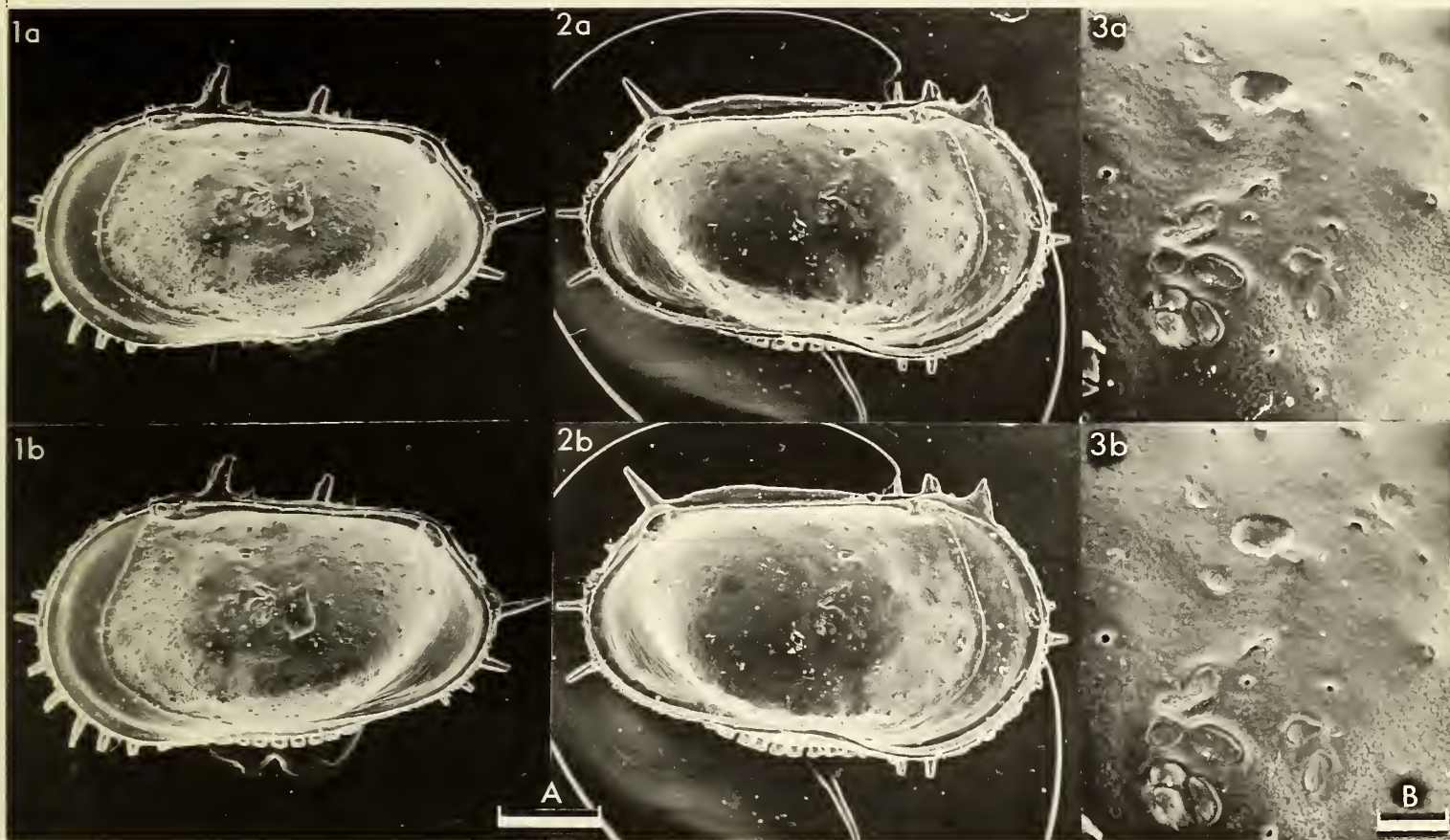

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Explanation of Plate 2:22:140

Figs. 1, 2, RV int. details of terminal hinge elements (IO 6267); figs. 3, 4, LV int. details of terminal hinge elements (IO 6269).

Scale A (50  $\mu$ m ;  $\times 265$ ), figs. 1-4.







# STEREO-ATLAS OF OSTRACOD SHELLS

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